Adams' Spectral Sequence

$K(z_p,n)$.

3) Natural projections $p_j:\bar{X} \to X_j$ induce the epimorphisms $(p_j)_*$ for all $j \geq 0$.

Let $\alpha = \{X_i, \varphi_i, F_i, p_i\}$ and $\beta = \{X'_i, \varphi'_i, F'_i, p'_i\}$ be two p-systems. Let $\alpha > \beta$ if for the identification of the groups $\pi_*(X), \pi_*(\bar{X})$ to $\pi_*(\bar{X}')$ it holds: $\ker(p_i)_* = \ker(p'_i)_*$, $i \leq n$ and $\ker(p_n)_* \subset \ker(p'_n)_*$.

Principal theorem 2: In the class of p-systems of a space X there exists one and only one system (up to the singular homotopic type) being maximal with respect to the introduced order.

Definition 3: The natural filtration of the p-space is the sequence of subspaces of $\bar{X}$:

$$\bar{X} = Y_0 \supset Y_1 \supset \ldots \supset Y_3 \supset \ldots,$$

where $Y_i = p_i^{-1}(F_i)$, $\{X_i, \varphi_i, F_i, p_i\}$ is the maximal p-system of X and $\bar{X}$ is the limit space.

Definition 4: The filtration of the homotopic and homological groups of the p-space X is called natural if it is generated by a natural filtration of X.

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Adams' Spectral Sequence

Lemma 3: The elements $\alpha \in \pi_{m+n}(S^n X)$ and $E\alpha \in \pi_{m+n+1}(S^n X)$, where E - covering, have the same natural filtration if $m < n-1$.

Theorem 3: The filtration of the group $\pi_*^S(X)$ which is determined by the Adams sequence is identical with the natural filtration of this group.

The assertion of Adams on $E_\infty(S^0)$ (S^0- zero-dimensional sphere) follows from theorem 3.

There is 1 non-Soviet reference.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova (Moscow State University im. M.V.Lomonosov)

PRESENTED: May 13, 1960, by P.S.Aleksandrov, Academician.

SUBMITTED: May 11, 1960

Card 4/4

L 09189-67
ACC NR: AP7002800 SOURCE CODE: UR/0144/66/000/009/0995/1000

AUTHOR: Vinogradov, A. L.; Rizun, V. I.; Chebotarev, Ya. P.

ORG: none

TITLE: Automatic control system for asynchronous motors for a lifting apparatus for the stopping period, using controlled valves

SOURCE: IVUZ. Elektromekhanika, no. 9, 1966, 995-1000

TOPIC TAGS: thyristor, electronic rectifier

ABSTRACT: In order to provide a source of controlled voltage for dynamic braking in asynchronous drive apparatus, the authors have created small controllable rectifiers, operating on the phase control principle, using silicon thyristors. The requirements for accuracy and range of control are satisfied by using a phase controller, in which the heating signal is applied in the form of a pulse with a steep leading edge, which provides accurate control of the anode current. The main element of the phase controller is a shift register made of pulse logical elements. The supply pulses for the logic elements are formed by a pulse generator whose generation frequency is inversely proportional to the difference signal created by the difference between the assigned and actual speeds of the machine. Movement equations for the lift machine are presented. Orig. art. has: 3 figures and 20 formulas. [JPRS: 39,183]

SUB CODE: 13, 09 / SUBM DATE: 03Sep65 / ORIG REF: 006

Card 1/1 UDC: 621.313.333+621.375

VINOGRADOV, A.M.

Adam's spectral sequence. Dokl.AN SSSR 133 no.5:999-1002 Ag '60. (MIRA 13:8)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akad. P.S.Aleksandrovym.
(Sequences (Mathematics))

VINOGRADOV, A. M.

VINOGRADOV, A. M., Tekhnik i NAUMOVA, N. A. Arkh., OVCHINNIKOV, A. A. Arkh.

Nauchno-issledovatel'skiy institut arkhitektury zhilishcha Akademii Arkhitektury SSSR

Karkasno-shchitovyye i shchitovyye derevyannyye odnoetazhnyye doma zavodskogo izgotovleniya massovogo tipa. Page 71

SO: Collections of Annotations of Scientific Research Work on Construction, completed in 1950.
Moscow, 1951

VINOGRADOV, A.M.

Grabbing device for hoisting reinforced concrete rings.
Rats. i izobr.predl. v stroi. no.89:3-5 '54.(MLRA 9:6)
(Hoisting machinery)

VINOGRADOV, A.M.

Some homotopic properties of a space imbedding a circle inside a sphere or ball. Dokl. AN SSSR 156 no. 5:999-1002 Je '64.
(MIRA 17:6)

1. Moskovskiy institut radioelektroniki i gornoy elektromekhaniki.
Predstavleno akademikom P.S.Aleksandrovym.

BOL'SHAKOV, V.M.; VINOGRADOV, A.M.; DOROKHOV, A.N.; KAZAKOV, I.V.; MARTUNYAN, A.K.; ROMANOV, A.A.; SEMENOVSKIY, V.D.

Floors made of large rolled gypsum cement concrete panels. Stroi. mat. 7 no.9:26-28 S '61. (MIRA 14:11)
(Floors, Concrete)

VINOGRADOV, A.N., kand.ekonomicheskikh nauk; LECHKIN, V.V., inzh.

Centralization and mechanization of inventory accounting for available freight cars. Vest.TSNII MPS 19 no.5:49-51 '60. (MIRA 13:8)
(Railroads--Accounts, Bookkeeping, etc.)
(Railroads--Freight cars)

VINOGRADOV, A. B.

Methods for lowering the costs of house construction. Moskva, Gos. izd-vo arkhitektury i gradostroit., 1950. 65 p. (51-25004)

TH435.V5

VINOGRADOV, Andrey Nikolayevich; KAZANSKIY, B., red.; TELEGINA, T., tekhn.red.

[Planning the lowering of housing construction costs] Planirovanie snizheniia sebestoimosti rabot v zhilishchnom stroitel'stve. Moskva, Gosfinizdat, 1959. 103 p. (MIRA 13:3)
(Construction industry--Costs)

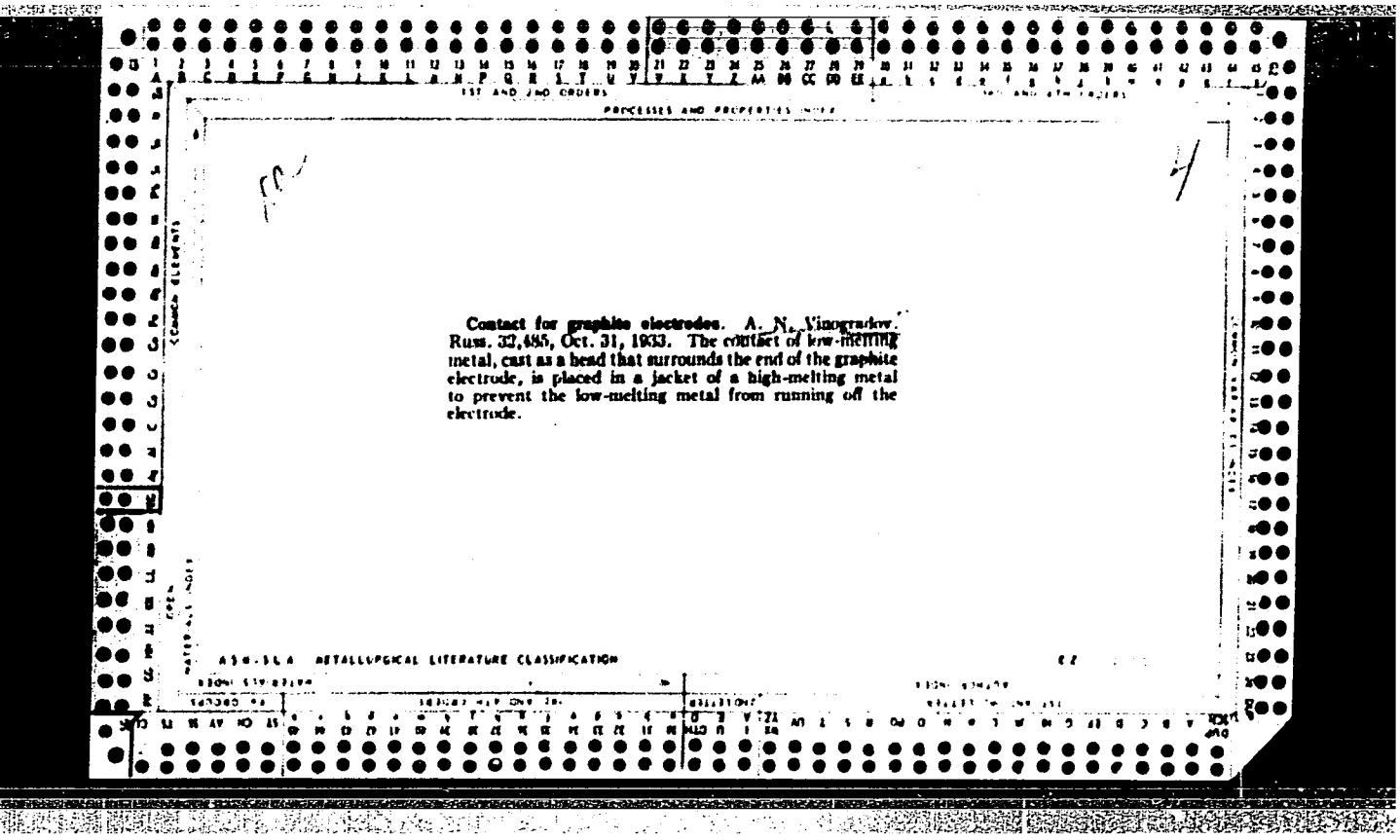
VINOGRADOV, Andrey Nikolayevich; NAUMOV, I., otv.red.; BOROZDIN, B., red.izdva; TELEGINA, T., [illegible] red.

[Cost planning in construction; based on practice in housing construction] Planirovanie sebestoimosti v stroitel'stve; na opyte zhilishchnogo stroitel'stva. Moskva, Gosfinizdat, 1962. 186 p. (MIRA 16:1)

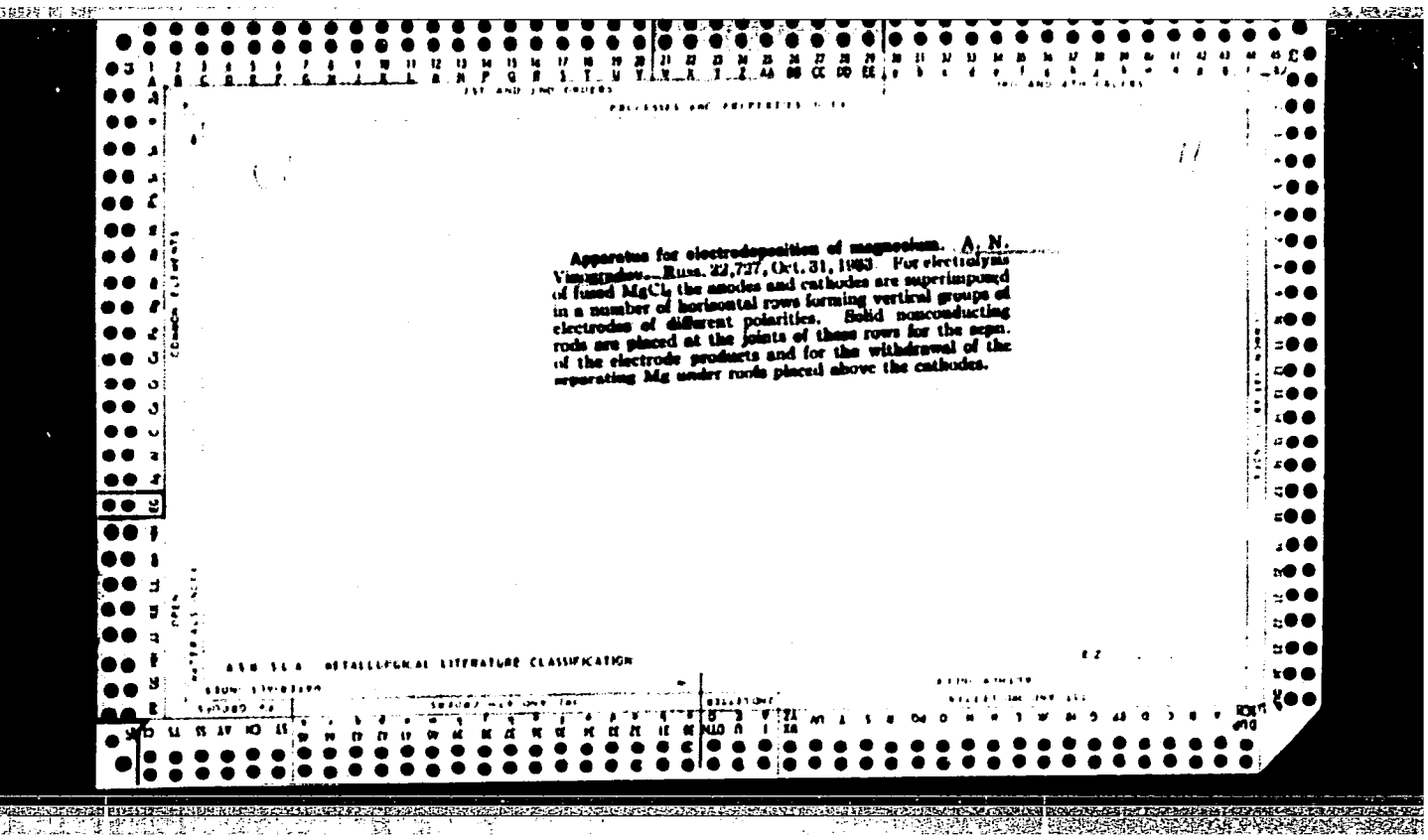
(Construction industry—Costs)

VINOGRADOV, A.N.; PESKOVA, L.N., redaktor; VERINA, G.P., tekhnicheskiy redaktor

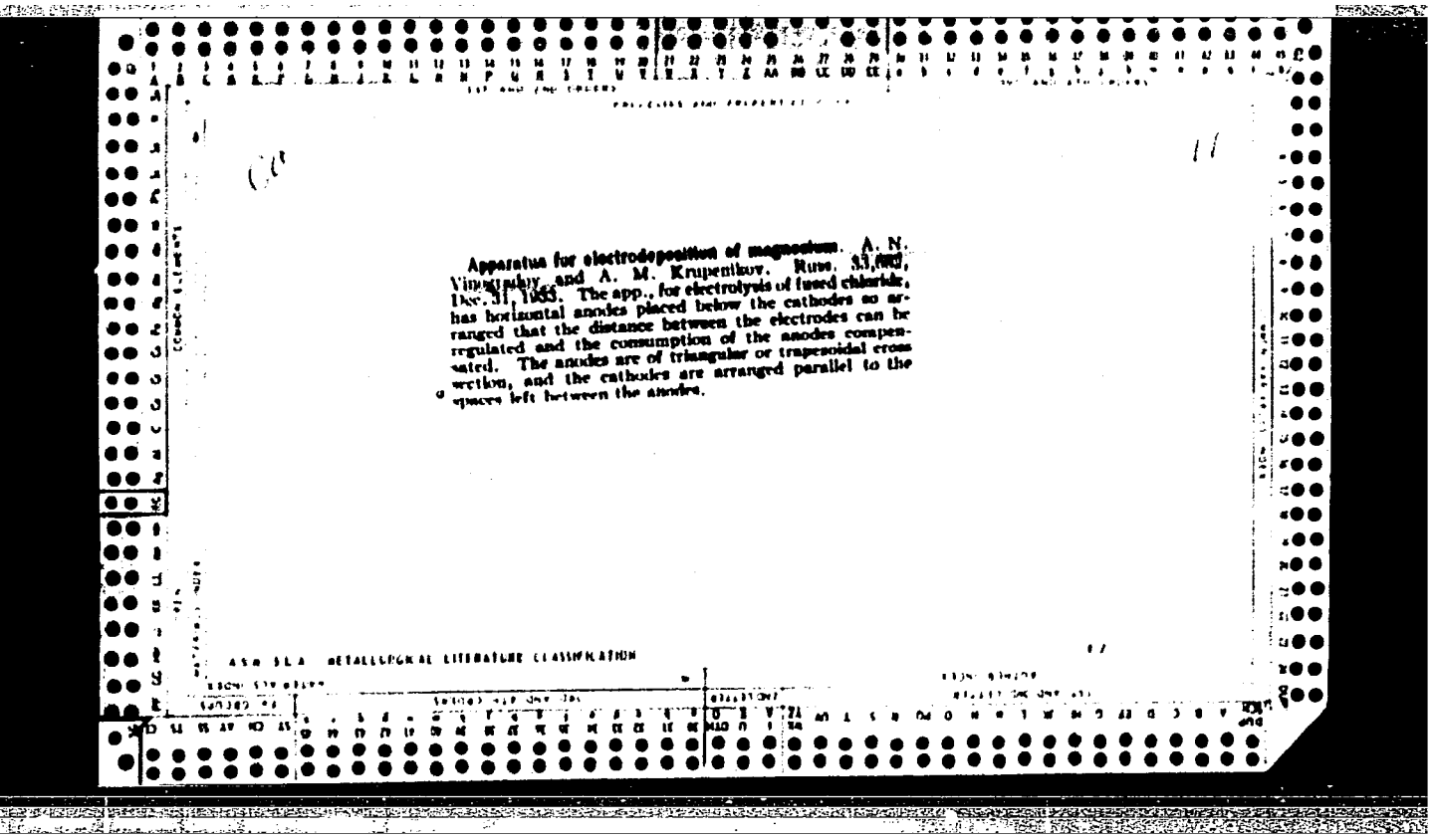
[Machine calculation in the railroad transport industry] Mekhanizatsiia ucheta na zheleznodorozhnom transporte. Moskva, Gos. transp. zhel-dor. izd-vo, 1953. 295 p. [Microfilm] (MLRA 7:10)
(Railroads--Accounts, bookkeeping, etc.)
(Calculating machines)



Contact for graphite electrodes. A. N. Vinogradov. Russ. 32,485, Oct. 31, 1933. The contact of low-melting metal, cast as a head that surrounds the end of the graphite electrode, is placed in a jacket of a high-melting metal to prevent the low-melting metal from running off the electrode.



Apparatus for electrodeposition of magnesium. A. N. Vinogradov. Russ. 22,727, Oct. 31, 1933. For electrolysis of fused $MgCl_2$ the anodes and cathodes are superimposed in a number of horizontal rows forming vertical groups of electrodes of different polarities. Solid nonconducting rods are placed at the joints of these rows for the separation of the electrode products and for the withdrawal of the separating Mg under rods placed above the cathodes.



Apparatus for electrodeposition of magnesium. A. N. Vinogradov and A. M. Krupenikov. Russ. 53,803, Dec. 31, 1938. The app., for electrolysis of fused chlorides, has horizontal anodes placed below the cathodes so arranged that the distance between the electrodes can be regulated and the consumption of the anodes compensated. The anodes are of triangular or trapezoidal cross section, and the cathodes are arranged parallel to the spaces left between the anodes.

VINOGRADOV, A.N.; LIVSHIN, G.L.; OBRAZTSOVA, R.I.; TULUPOV, L.P.; Prinimali uchastiye: RAZORENOVA, L.K., inzh.; DUBINKINA, L.I., inzh.; PODGORNYKH, A.L., inzh.; LAVRENT'YEV, M.V., retsenzent; MINAKOV, A.D., retsenzent; NESTEROV, Ye.P., retsenzent; STEFANOV, N.Ya., retsenzent; USHAKOV, P.S., retsenzent; KRISHTAL', L.I., red.; KHITROVA, N.A., tekhn. red.

[Calculating machines in accounting, planning and administration in railroad transportation] Vychislitel'naia tekhnika v uchete, planirovanii i upravlenii na zheleznodorozhnom transporte. [By] A.N.Vinogradov i dr. Moskva, Transzheldorizdat, 1963. 407 p. (MIRA 17:2)

SKLYUYEVA, M.A.; VINOGRADOV, A.N.; FEDYUNINA, Ye.N. (Moskva)

Education and postgraduate training of medical personnel. Sov. zdrav. 21 no.1:85-96 '62. (MIRA 15:2)

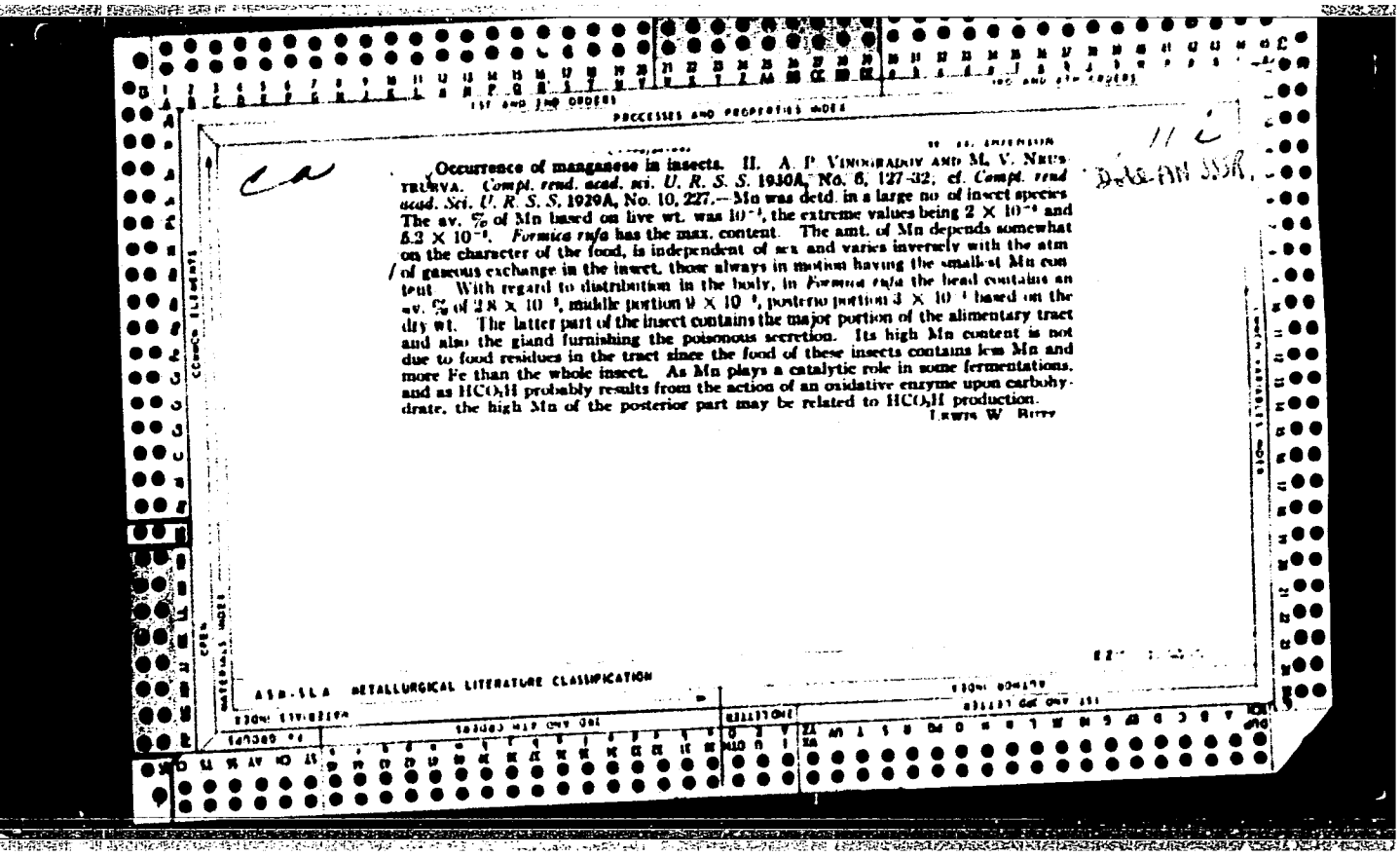
1. Iz Otdela meditsinskoy statistiki (nachal'nik G.F.TSerkovnyy) Ministerstva zdravookhraneniya SSSR.
(MEDICINE--STUDY AND TEACHING)
(MEDICAL STATISTICS)

VINOGRADOV, Aleksandr Nikolayevich; CHERNOMORDIK, D.I., prof., retsenzent; PETROV, A.I., red.; USENKO, L.A., tekhn. red.

[Why it is necessary to have separate accounting in every railroad department] Zachem nuzhen uchet v kazhdom zheleznodorozhnom predpriiatii. Moskva, Vses. izdatel'sko-poligraf. ob"edinenie M-va putei soobshcheniia, 1961. 49 p. (MIRA 14:10)
(Railroads—Accounts, bookkeeping, etc.)

ALEKSEYEV, V.N.; VINOGRADOV, A.N., kand.ekon.nauk; VLADIMIROV, V.A., inzh.; KOCHETOV, I.V., prof., doktor ekon.nauk; MINAKOV, P.F.; POTAPOV, I.A.; ROMANOV, M.P., dotsent, kand.ekon.nauk; SPENGLER, Ye.N., kand.ekon.nauk; SHITOV, A.V.; SHUKHATOVICH, I.M.; YAKUBOV, L.S.; IVLIYEV, I.V., red.; KRISHTAL', L.I., red.; KOCHETOV, I.V., prof., doktor ekon.nauk, nauchnyy red.; IVANOV, A.P., nauchnyy red.; BOBROVA, Ye.N., tekhn.red.

[Statistics and bookkeeping in railroad transportation; manual] Statistika i bukhgalterskii uchet na zheleznodorozhnom transporte; spravochnik. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 485 p. (MIRA 14:3)
(Railroads--Accounts, bookkeeping, etc.)
(Railroads--Statistics)

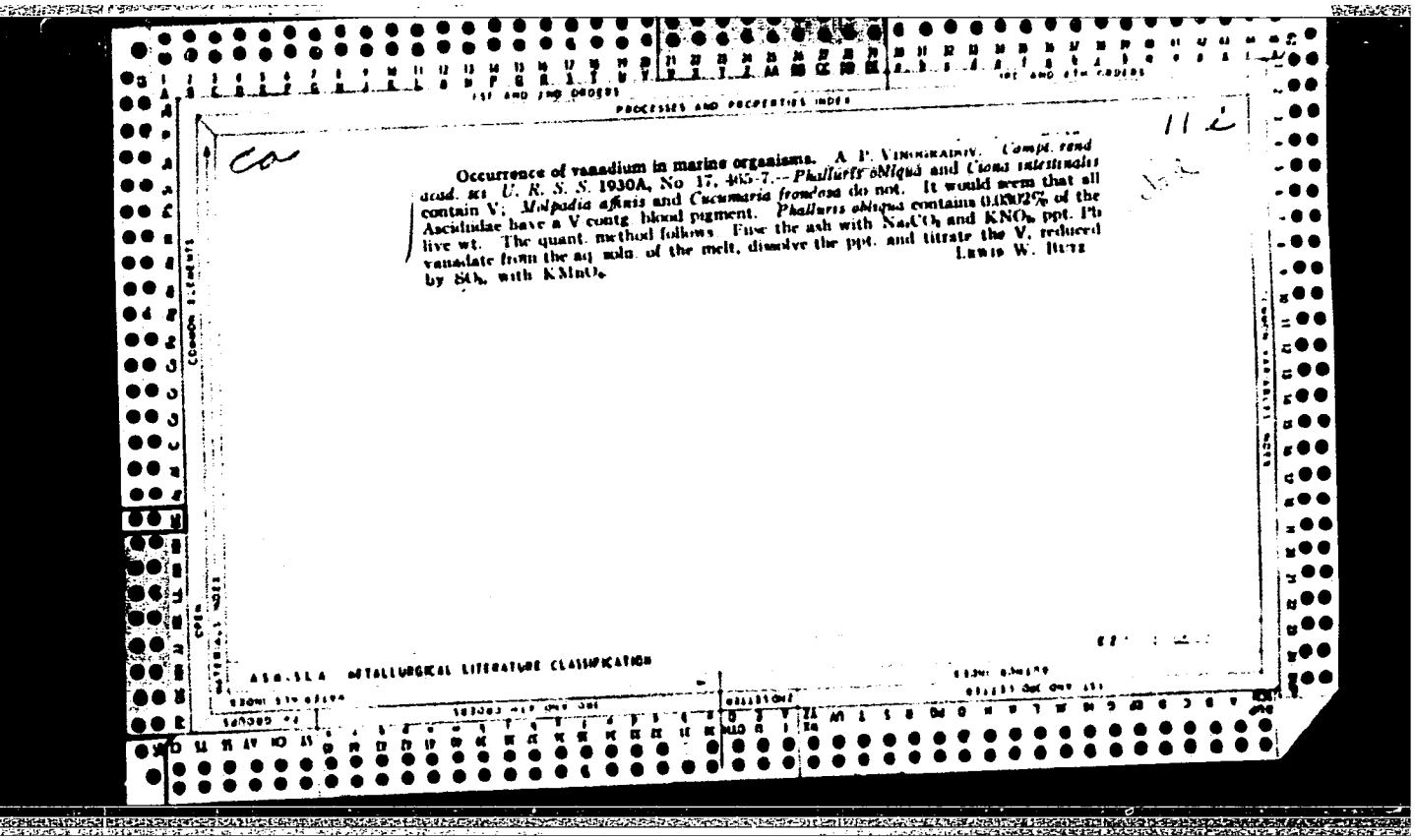


PROCESSES AND PROPERTIES INDEX

Occurrence of manganese in insects. II. A. P. Vinogradov and M. V. Nesterova. *Compt. rend. acad. sci. U. R. S. S.* 1930A, No. 6, 127-32; cf. *Compt. rend. acad. Sci. U. R. S. S.* 1929A, No. 10, 227.—Mn was detd. in a large no. of insect species. The av. % of Mn based on live wt. was 10^{-4}, the extreme values being 2×10^{-5} and 5.2×10^{-4}. *Formica rufa* has the max. content. The amt. of Mn depends somewhat on the character of the food, is independent of sex and varies inversely with the atm. of gaseous exchange in the insect, those always in motion having the smallest Mn content. With regard to distribution in the body, in *Formica rufa* the head contains an av. % of 2.8×10^{-4}, middle portion 9×10^{-5}, posterio portion 3×10^{-4} based on the dry wt. The latter part of the insect contains the major portion of the alimentary tract and also the gland furnishing the poisonous secretion. Its high Mn content is not due to food residues in the tract since the food of these insects contains less Mn and more Fe than the whole insect. As Mn plays a catalytic role in some fermentations, and as HCO_2H probably results from the action of an oxidative enzyme upon carbohydrate, the high Mn of the posterior part may be related to HCO_2H production.

Lewis W. Bass

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

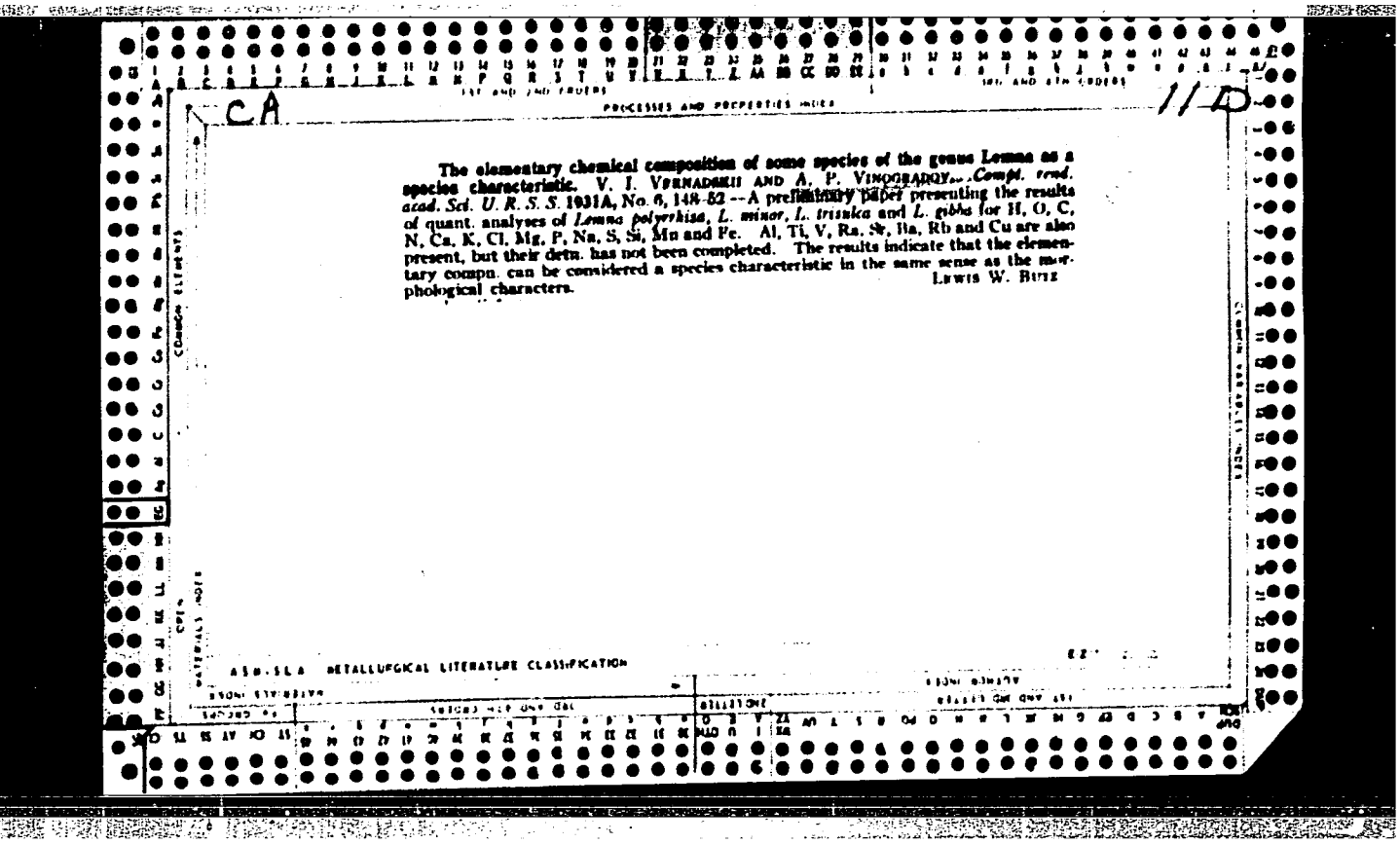
Ca

11 c

Occurrence of vanadium in marine organisms. A. P. Vinogradov. *Compt. rend acad. sci U. R. S. S.* 1930A, No 17, 465-7.—*Phallusia obliqua* and *Ciona intestinalis* contain V; *Molpadia affinis* and *Cucumaria frondosa* do not. It would seem that all Ascidiidae have a V contg. blood pigment. *Phallusia obliqua* contains 0.0302% of the live wt. The quant. method follows. Fuse the ash with Na_2CO_3 and KNO_3 ppt. Pb vanadate from the aq. soln. of the melt, dissolve the ppt. and titrate the V, reduced by SO$_2$, with $KMnO_4$.

Lewis W. Hunt

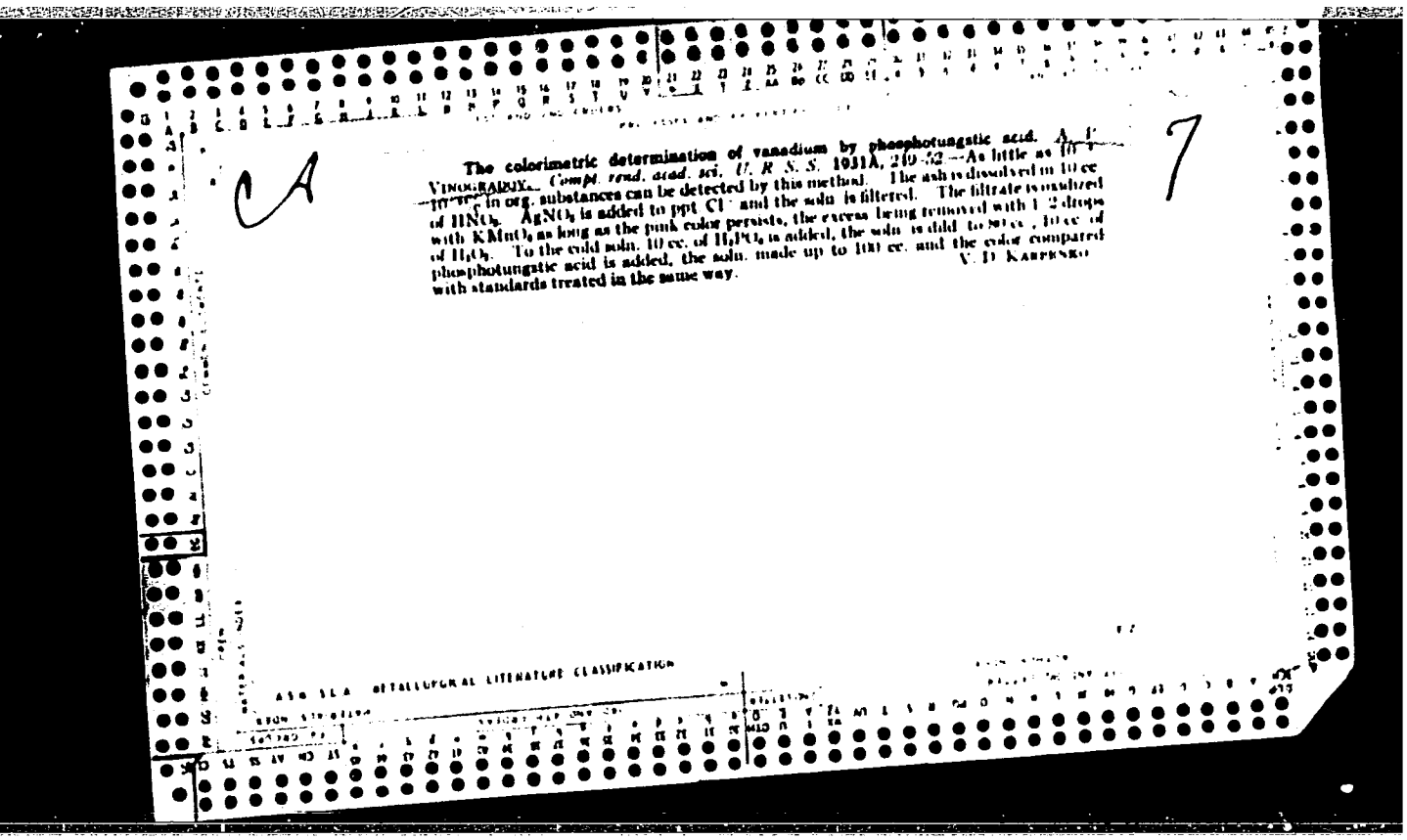
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

11D

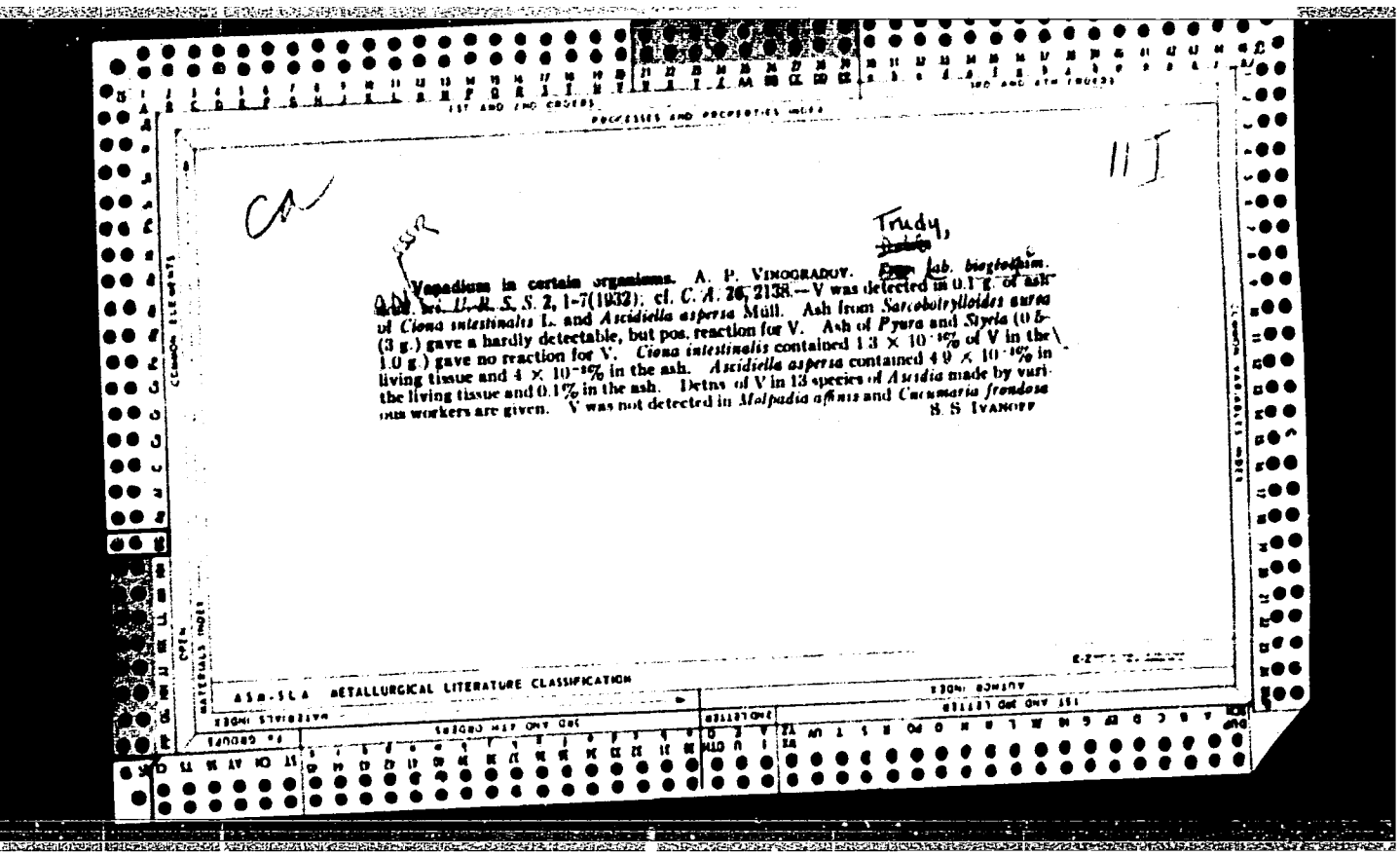
The elementary chemical composition of some species of the genus Lemna as a species characteristic. V. I. VERNADSKII AND A. P. VINOGRADOV.... *Compt. rend. acad. Sci. U. R. S. S.* 1931A, No. 6, 148-52.--A preliminary paper presenting the results of quant. analyses of *Lemna polyrrhiza*, *L. minor*, *L. trisulca* and *L. gibba* for H, O, C, N, Ca, K, Cl, Mg, P, Na, S, Si, Mn and Fe. Al, Ti, V, Ra, Sr, Ba, Rb and Cu are also present, but their detn. has not been completed. The results indicate that the elementary compn. can be considered a species characteristic in the same sense as the morphological characters.
LEWIS W. BUTZ



CA 7

The colorimetric determination of vanadium by phosphotungstic acid. A. I. VINOGRADOV. *Compt. rend. acad. sci. U. R. S. S.* 1931A, 249–52.—As little as 10^{-5} g. in org. substances can be detected by this method. The ash is dissolved in 10 cc. of HNO_3. $AgNO_3$ is added to ppt. Cl^- and the soln. is filtered. The filtrate is oxidized with $KMnO_4$ as long as the pink color persists, the excess being removed with 1–2 drops of H_2O_2. To the cold soln. 10 cc. of H_3PO_4 is added, the soln. is dild. to 50 cc., 10 cc. of phosphotungstic acid is added, the soln. made up to 100 cc. and the color compared with standards treated in the same way.

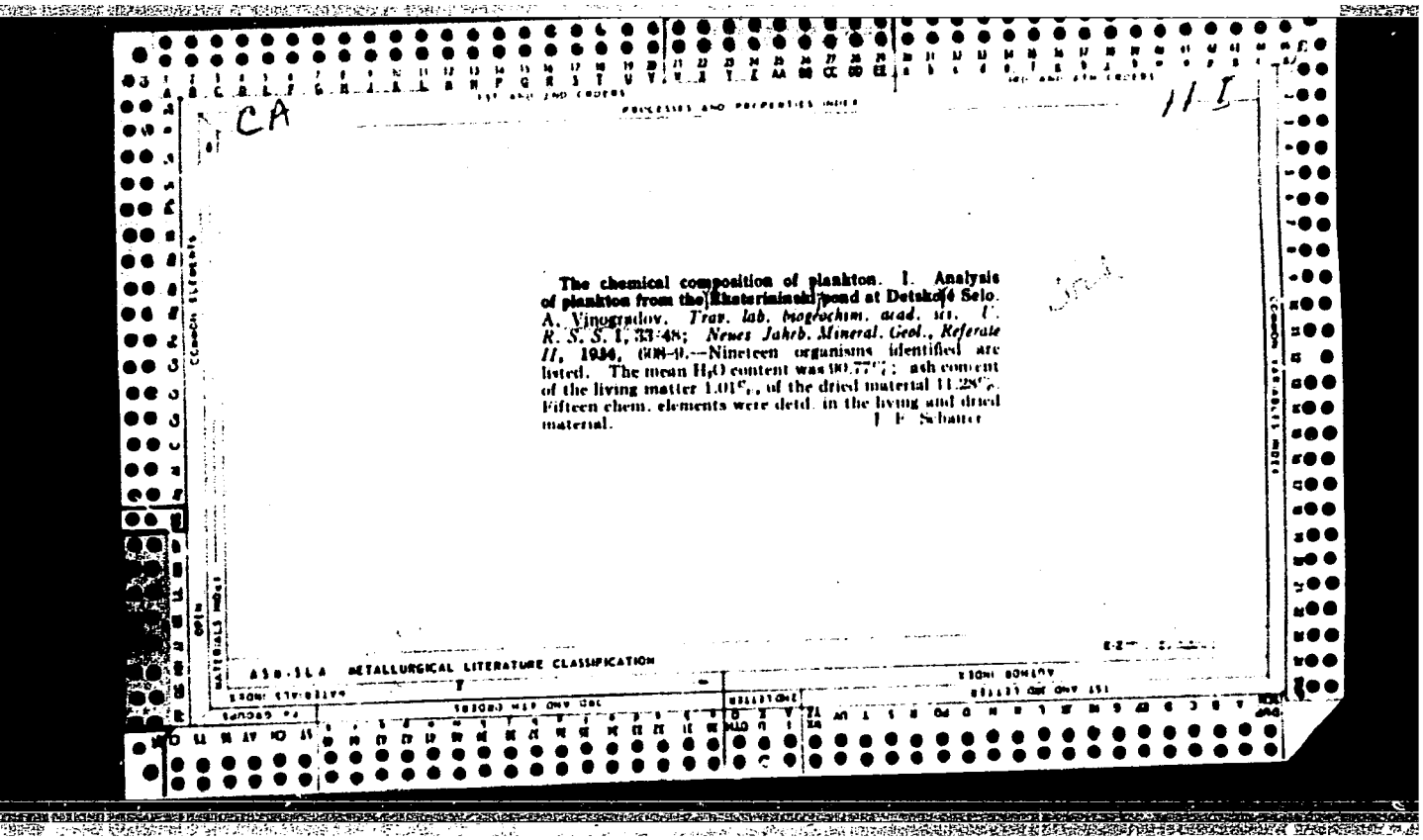
V. D. KARPENKO



Trudy,

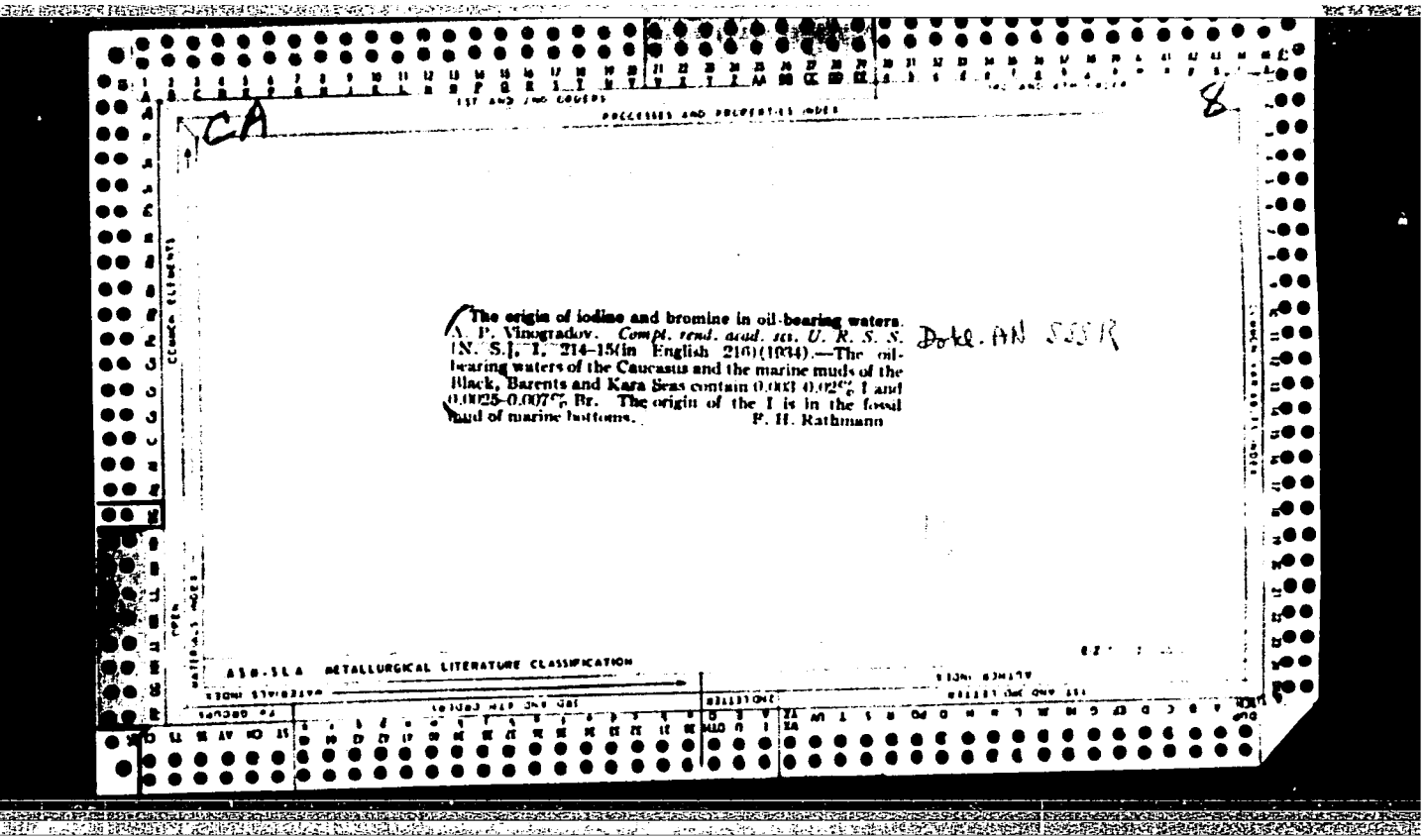
Vanadium in certain organisms. A. P. VINOGRADOV. Compt. rend. lab. biogéochim. Acad. Sci. U.R.S.S. 2, 1-7(1932); cf. C. A. 26, 2138.—V was detected in 0.1 g. of ash of *Ciona intestinalis* L. and *Ascidiella aspersa* Müll. Ash from *Sarcobotryiloides aurea* (3 g.) gave a hardly detectable, but pos. reaction for V. Ash of *Pyura* and *Styela* (0.5–1.0 g.) gave no reaction for V. *Ciona intestinalis* contained 1.3×10^{-3}% of V in the living tissue and 4×10^{-2}% in the ash. *Ascidiella aspersa* contained 4.9×10^{-4}% in the living tissue and 0.1% in the ash. Detns. of V in 13 species of *Ascidia* made by various workers are given. V was not detected in *Molpadia affinis* and *Cucumaria frondosa*.
S. S. IVANOFF

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



The chemical composition of plankton. I. Analysis of plankton from the Ekaterininskii pond at Detskoe Selo. A. Vinogradov. *Trav. lab. biogéochim. acad. sci. U. R. S. S.* 1, 33-48; *Neues Jahrb. Mineral. Geol., Referate II*, 1934, 608-9.—Nineteen organisms identified are listed. The mean H_2O content was 80.77%; ash content of the living matter 1.01%, of the dried material 11.28%. Fifteen chem. elements were detd. in the living and dried material. J. F. Schaller

A 5 8 - 5 L A METALLURGICAL LITERATURE CLASSIFICATION



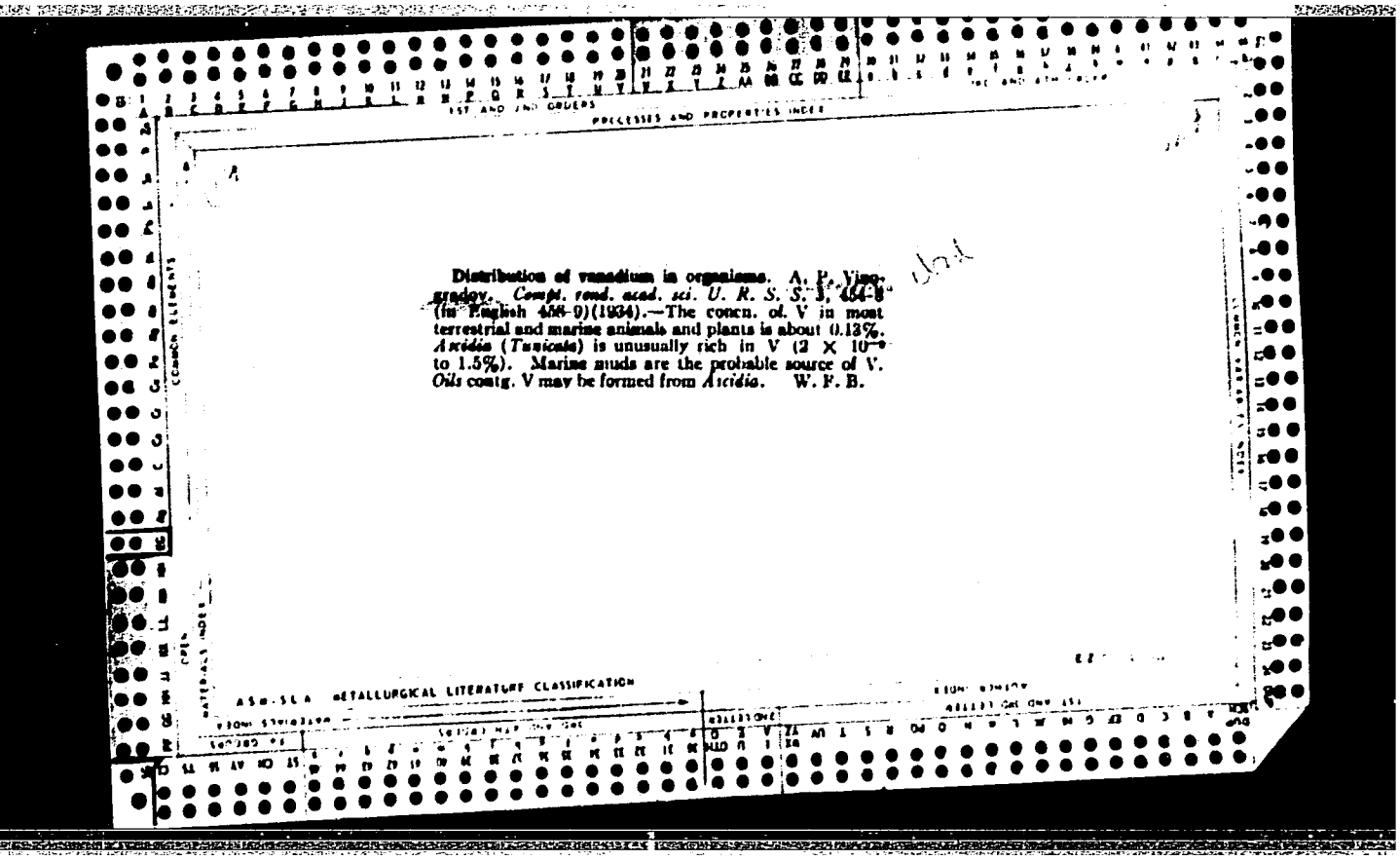
CA

8

The origin of iodine and bromine in oil-bearing waters. A. P. Vinogradov. *Compt. rend. acad. sci. U. R. S. S.* [N. S.], 1, 214–15(in English 216)(1934).—The oil-bearing waters of the Caucasus and the marine muds of the Black, Barents and Kara Seas contain 0.003–0.02% I and 0.0025–0.007% Br. The origin of the I is in the fossil mud of marine bottoms. P. H. Rathmann

Dokl. AN SSSR

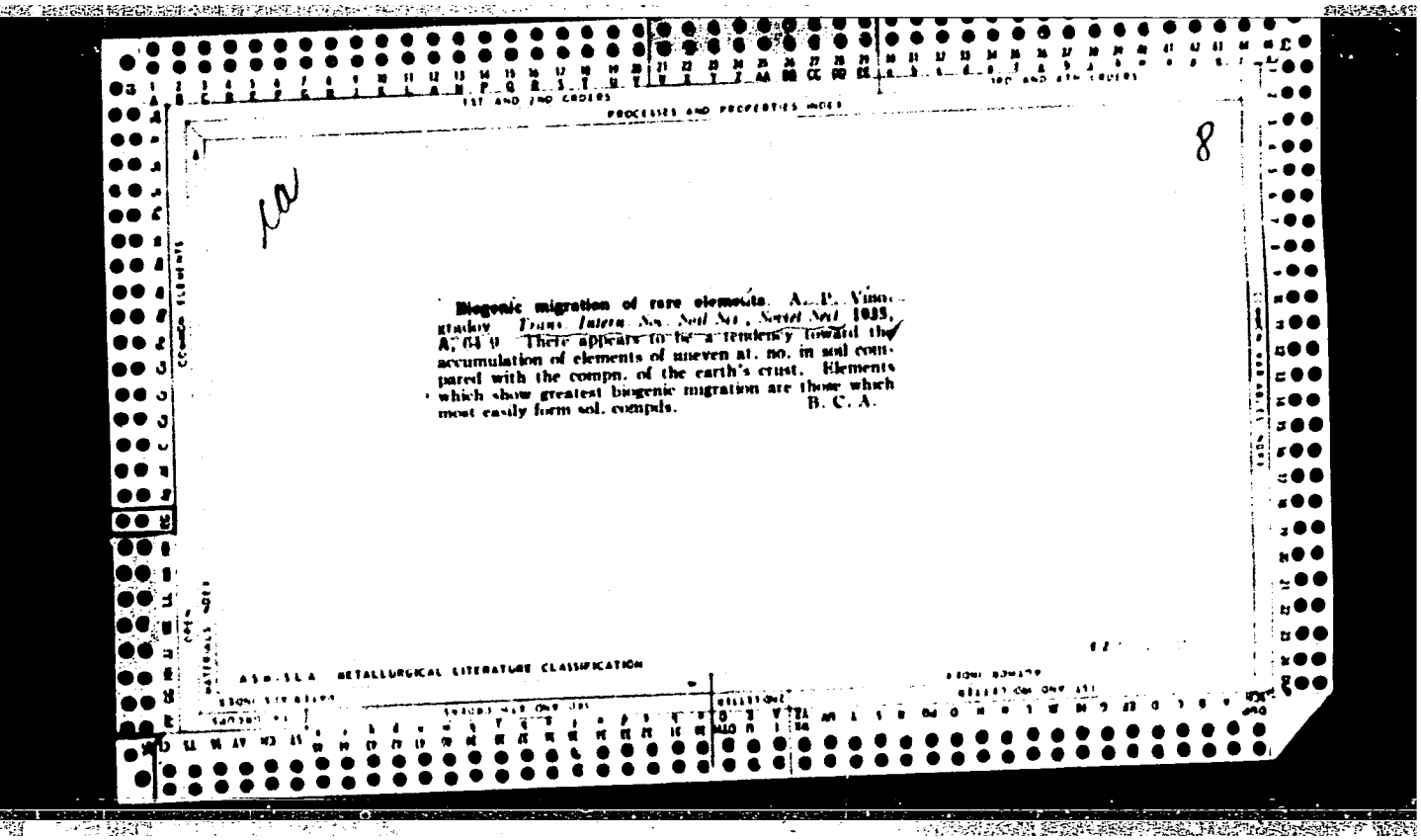
A58-51A METALLURGICAL LITERATURE CLASSIFICATION



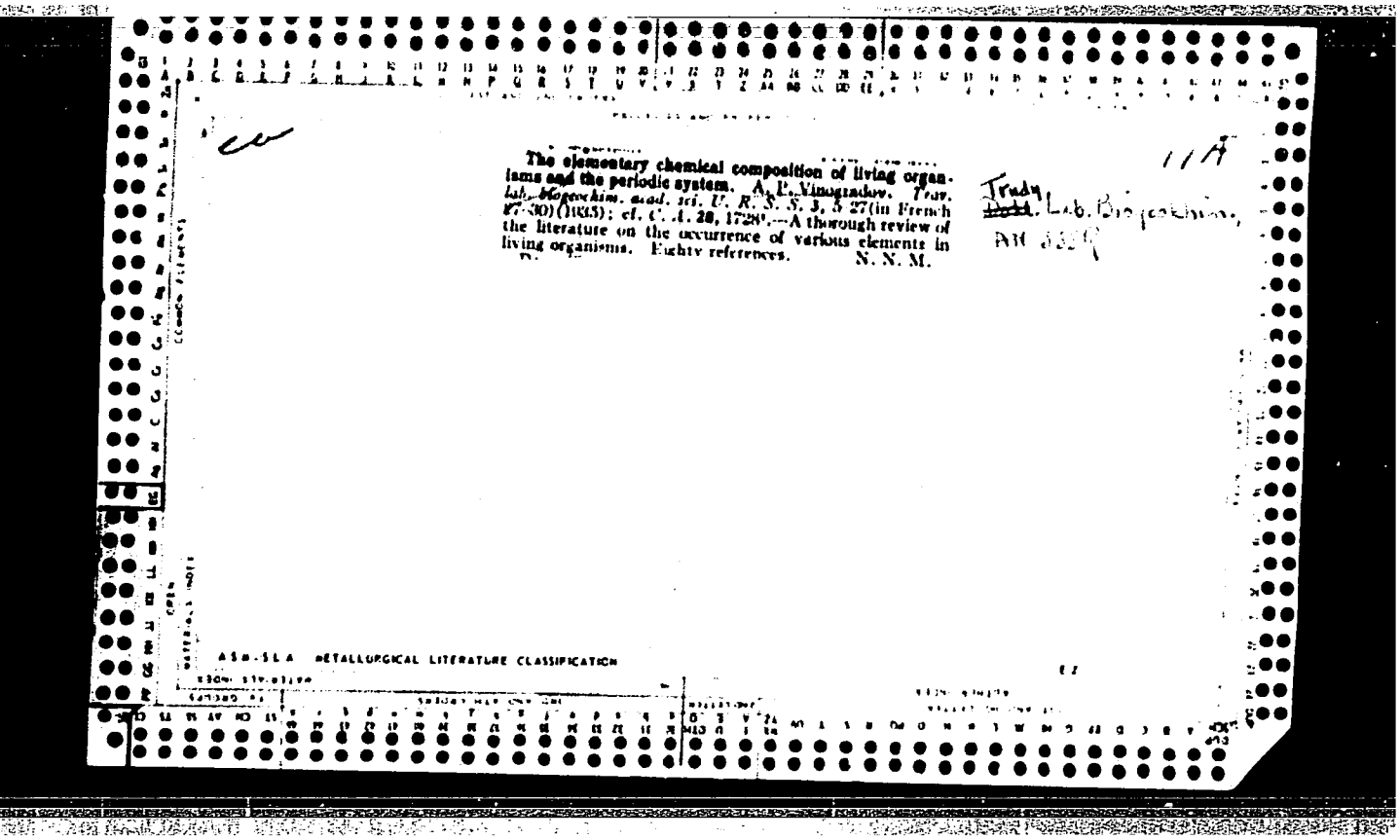
Distribution of vanadium in organisms. A. P. Vino-gradov. *Compt. rend. acad. sci. U. R. S. S.* 3, 454-8 (in English 458-9)(1934).—The concn. of V in most terrestrial and marine animals and plants is about 0.12%. *Ascidia* (*Tunicata*) is unusually rich in V (2×10^{-2} to 1.5%). Marine muds are the probable source of V. *Oils* contg. V may be formed from *Ascidia*. W. F. B.

VINOGRADOV, A. P.

"The Elemental Chemical Composition of Microorganisms and D. I. Mendeleyev's Periodic System of Elements," Works of the Biogeochemical Laboratory of the Academy of Sciences USSR, Vol. 3, 1935.



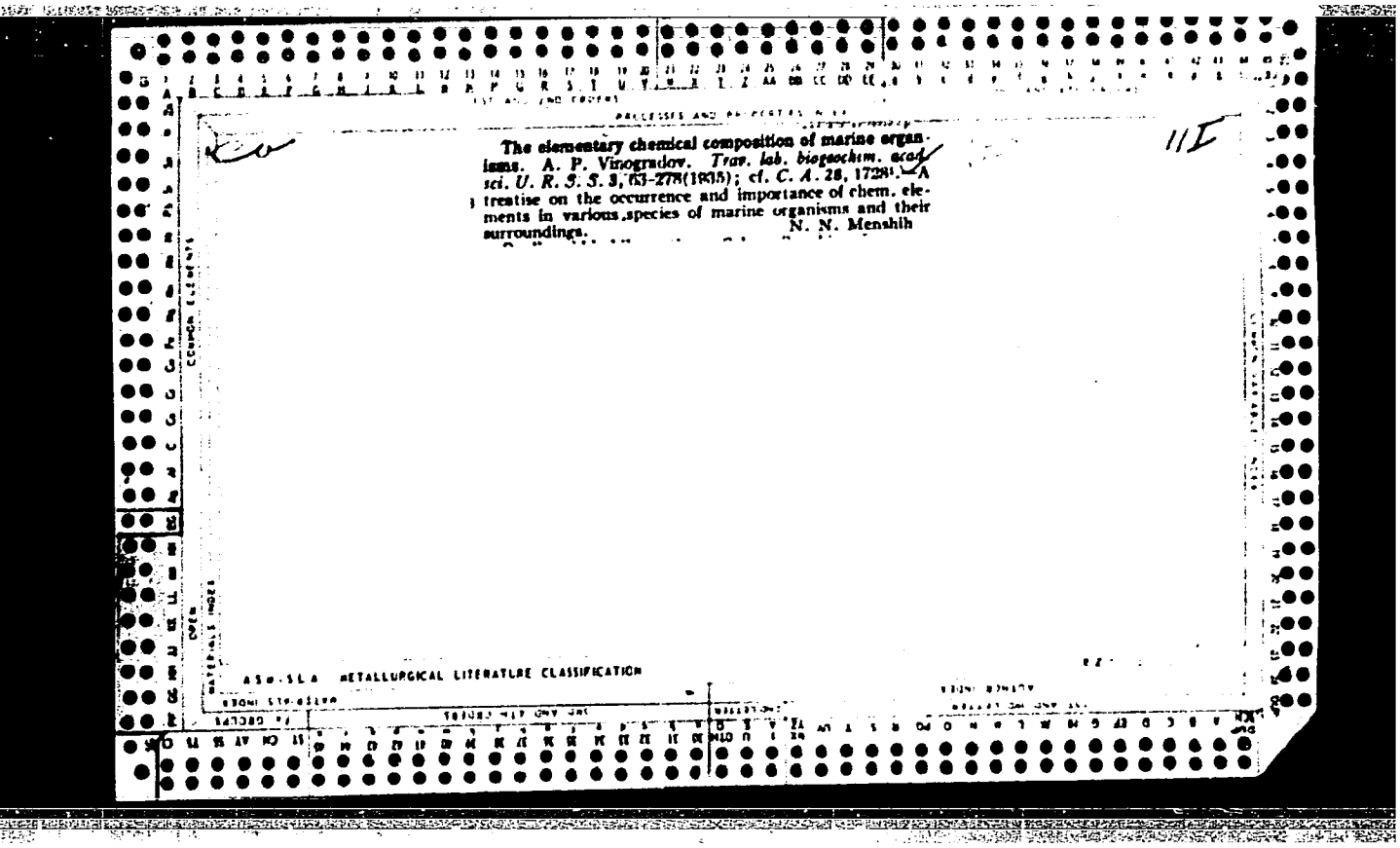
Biogenic migration of rare elements. A. P. Vinogradov. *Trans. Intern. Soc. Soil Sci., Soviet Sect.* 1935, A, 64-9. There appears to be a tendency toward the accumulation of elements of uneven at. no. in soil compared with the compn. of the earth's crust. Elements which show greatest biogenic migration are those which most easily form sol. compds. B. C. A.



The elementary chemical composition of living organisms and the periodic system. A. P. Vinogradov. *Trav. Lab. Biogeochim. acad. sci. U. R. S. S.* 3, 5-27 (in French 27-30) (1935); cf. *C. A.* 28, 1728⁹.—A thorough review of the literature on the occurrence of various elements in living organisms. Eighty references. N. N. M.

Trudy Lab. Biogeokhim.,

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



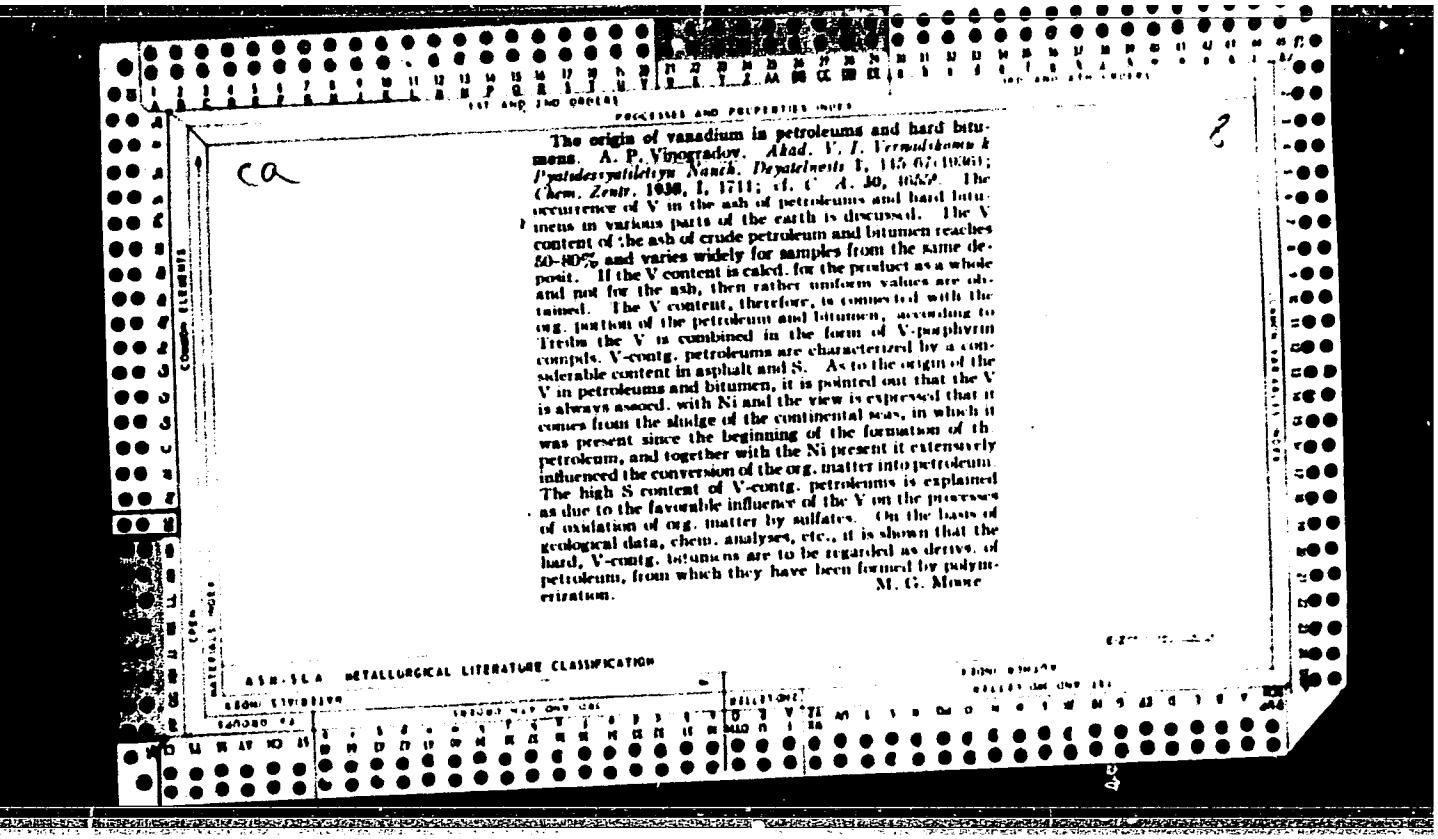
The elementary chemical composition of marine organisms. A. P. Vinogradov. *Trav. lab. biogeochim. acad. sci. U. R. S. S.* 3, 65–278(1935); cf. *C. A.* 28, 1728⁹. A treatise on the occurrence and importance of chem. elements in various species of marine organisms and their surroundings.
N. N. Menshih

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VINOGRADOV, A. P.

Vanadium in the petroleums and bitumens of the U.S.S.R. A. P. VINOGRADOV and G. G. Bergman (Compt. rend. Acad. Sci. U.R.S.S., 1935, 4, 349-352; cf. A., 1934, 1380). The distribution of V in the petroleums and bitumens of the U.S.S.R. has been determined. Deposits of the Devonian period contain the highest and those of the Jurassic period contain the lowest % of V. From much of the data it appears that V occurs as the % of org. matter in the rock, in Ishma asphaltite. The view that V passes into the petroleum from aq. solution in presence of H_2S, the V being held as V_2S_5, is considered disproved. It is probable that the V comes from the mud of continental sea basins in which V has been conc. by marine organisms. B. S. B.

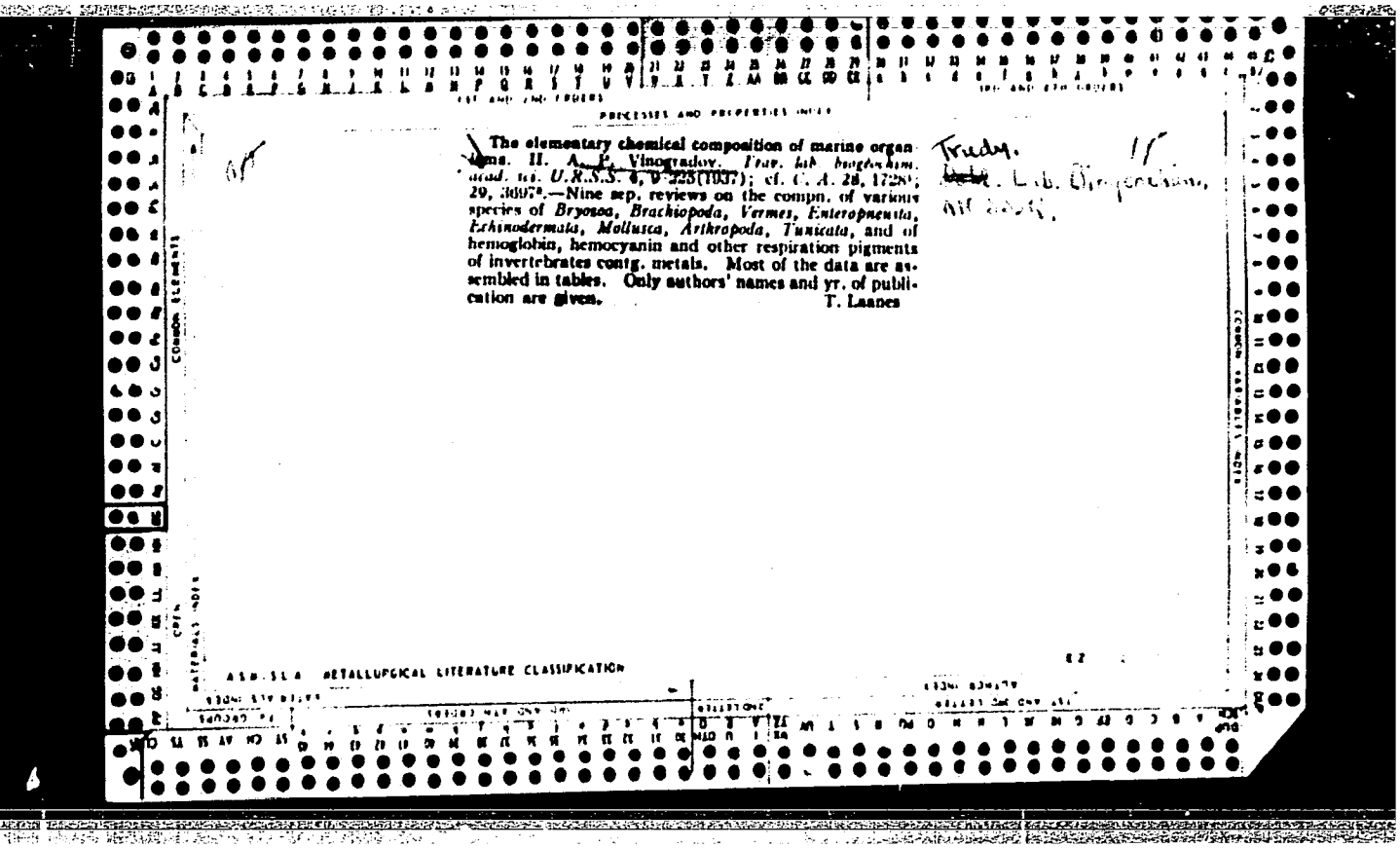
Dokl. AN SSSR.



CA

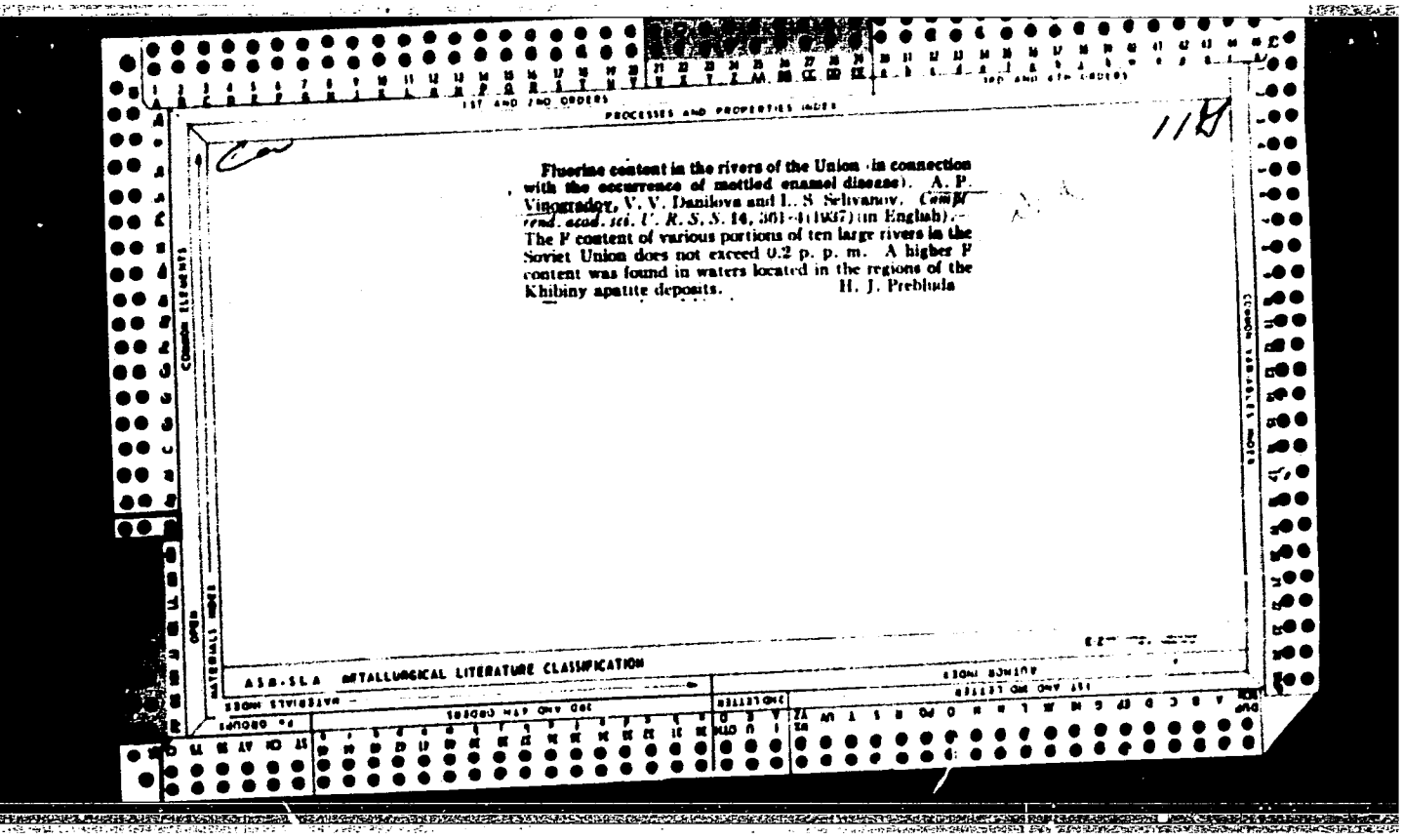
The origin of vanadium in petroleums and hard bitumens. A. P. Vinogradov. *Akad. V. I. Vernadskomu k Piyatidesyatiletiyu Nauch. Deyatelnosti* 1, 115-67(1936); *Chem. Zentr.* 1938, I, 1711; cf. C. A. 30, 6552. The occurrence of V in the ash of petroleums and hard bitumens in various parts of the earth is discussed. The V content of the ash of crude petroleum and bitumen reaches 50–80% and varies widely for samples from the same deposit. If the V content is calcd. for the product as a whole and not for the ash, then rather uniform values are obtained. The V content, therefore, is connected with the org. portion of the petroleum and bitumen, according to Treibs the V is combined in the form of V-porphyrin compds. V-contg. petroleums are characterized by a considerable content in asphalt and S. As to the origin of the V in petroleums and bitumen, it is pointed out that the V is always assocd. with Ni and the view is expressed that it comes from the sludge of the continental seas, in which it was present since the beginning of the formation of th petroleum, and together with the Ni present it extensively influenced the conversion of the org. matter into petroleum. The high S content of V-contg. petroleums is explained as due to the favorable influence of the V on the processes of oxidation of org. matter by sulfates. On the basis of geological data, chem. analyses, etc., it is shown that the hard, V-contg. bitumens are to be regarded as derivs. of petroleum, from which they have been formed by polymerization.

M. G. Mouse



The elementary chemical composition of marine organisms. II. A. P. Vinogradov. *Trav. lab. biogéochim. acad. sci. U.R.S.S.* 4, 9–225(1937); cf. *C. A.* 28, 1728⁸; 29, 3097⁸.—Nine sep. reviews on the compn. of various species of *Bryozoa, Brachiopoda, Vermes, Enteropneusta, Echinodermata, Mollusca, Arthropoda, Tunicata,* and of hemoglobin, hemocyanin and other respiration pigments of invertebrates contg. metals. Most of the data are assembled in tables. Only authors' names and yr. of publication are given.

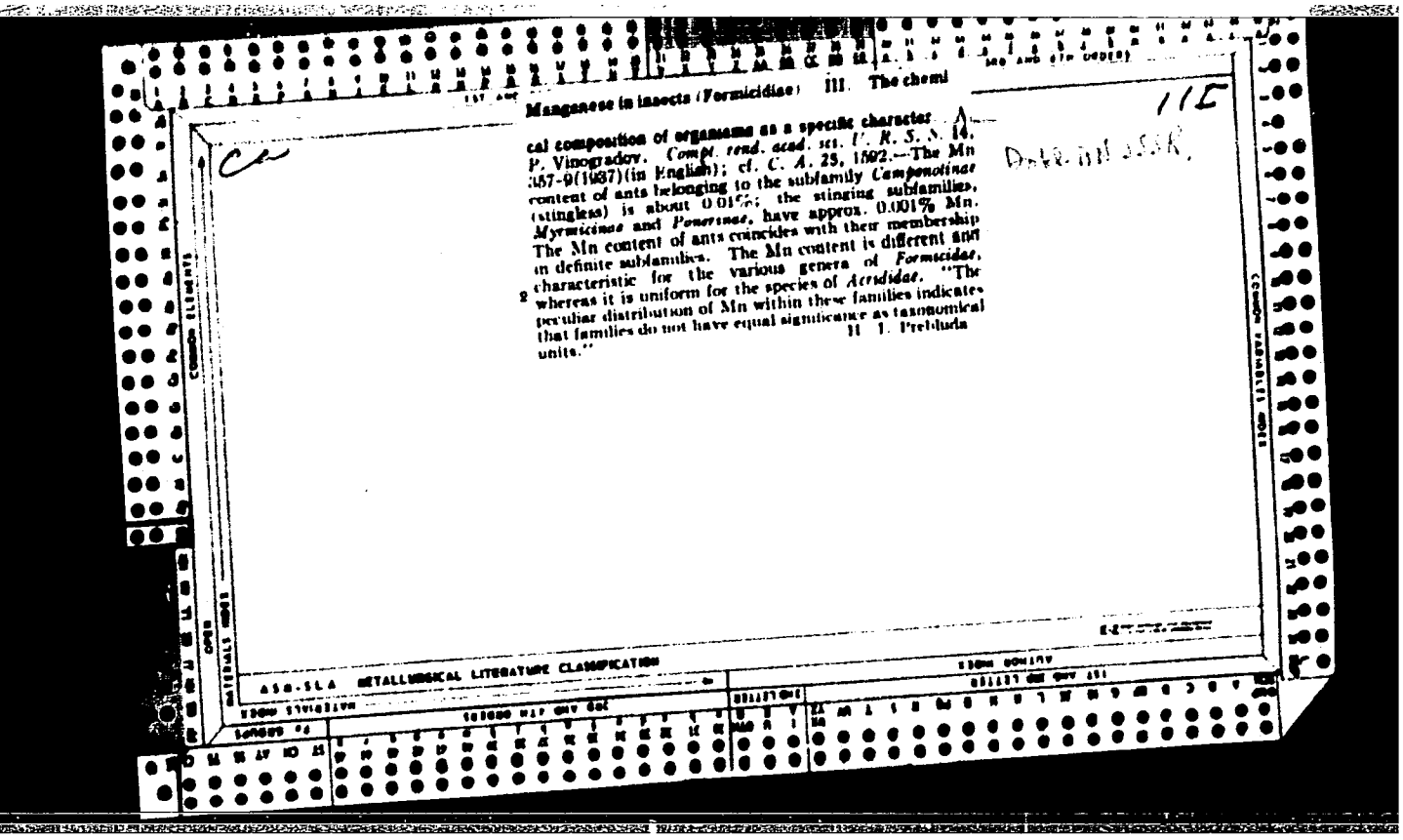
T. Laanes



PROCESSES AND PROPERTIES INDEX

Fluorine content in the rivers of the Union in connection with the occurrence of mottled enamel disease. A. P. Vinogradov, V. V. Danilova and L. S. Selivanov. *Compt. rend. acad. sci. U. R. S. S.* 14, 361–4 (1937) (in English).—The F content of various portions of ten large rivers in the Soviet Union does not exceed 0.2 p. p. m. A higher F content was found in waters located in the regions of the Khibiny apatite deposits. H. J. Prebluda

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

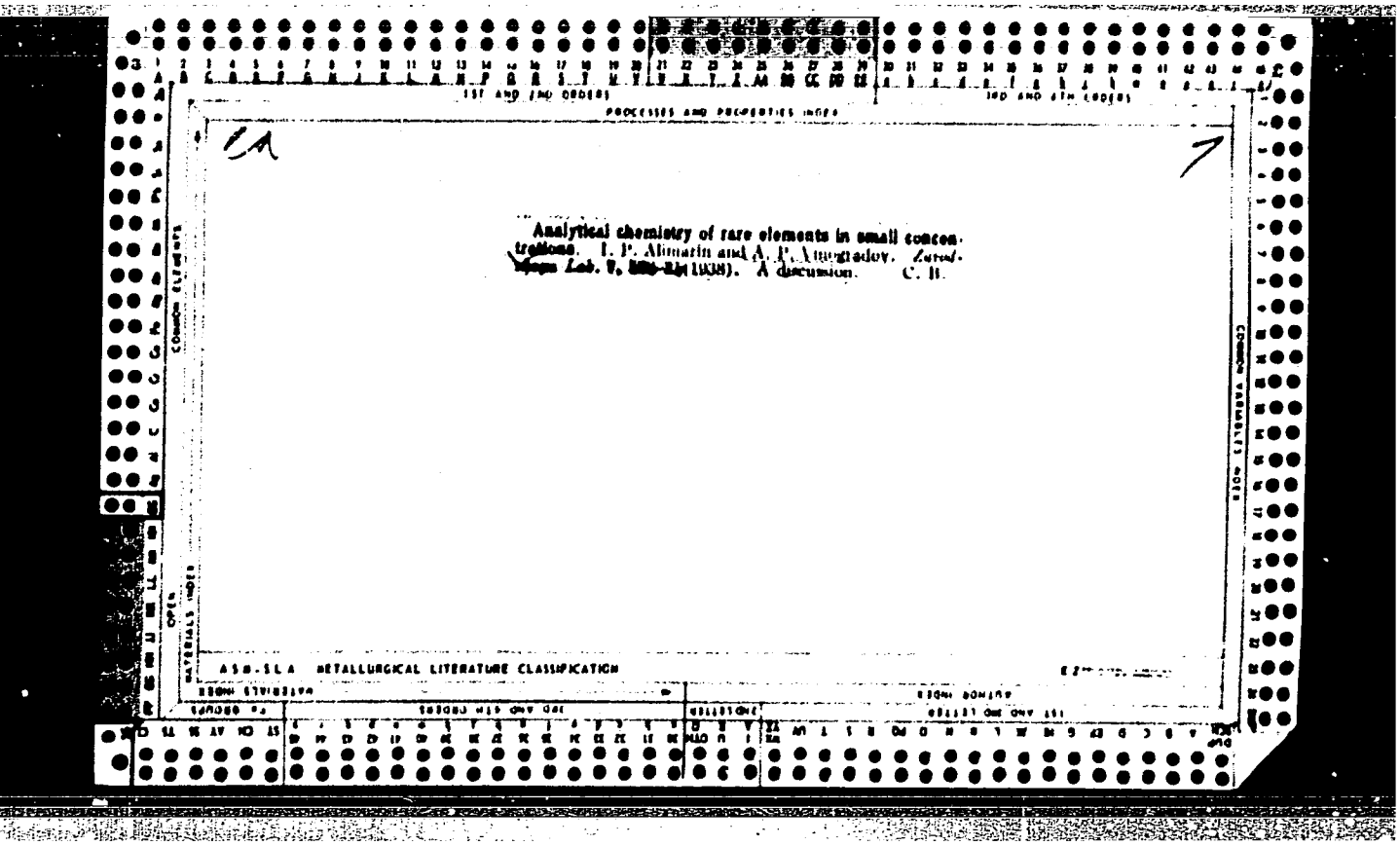


Manganese in insects (Formicidae) III. The chemi

cal composition of organisms as a specific character.
P. Vinogradov. *Compt. rend. acad. sci. U. R. S. S.* 14,
:57-9(1937)(in English); cf. *C. A.* 25, 1502.—The Mn
content of ants belonging to the subfamily *Camponotinae*
(stingless) is about 0.01%; the stinging subfamilies,
Myrmicinae and *Ponerinae*, have approx. 0.001% Mn.
The Mn content of ants coincides with their membership
in definite subfamilies. The Mn content is different and
characteristic for the various genera of *Formicidae*,
whereas it is uniform for the species of *Acrididae*. "The
peculiar distribution of Mn within these families indicates
that families do not have equal significance as taxonomical
units."

II 1. Prelidula

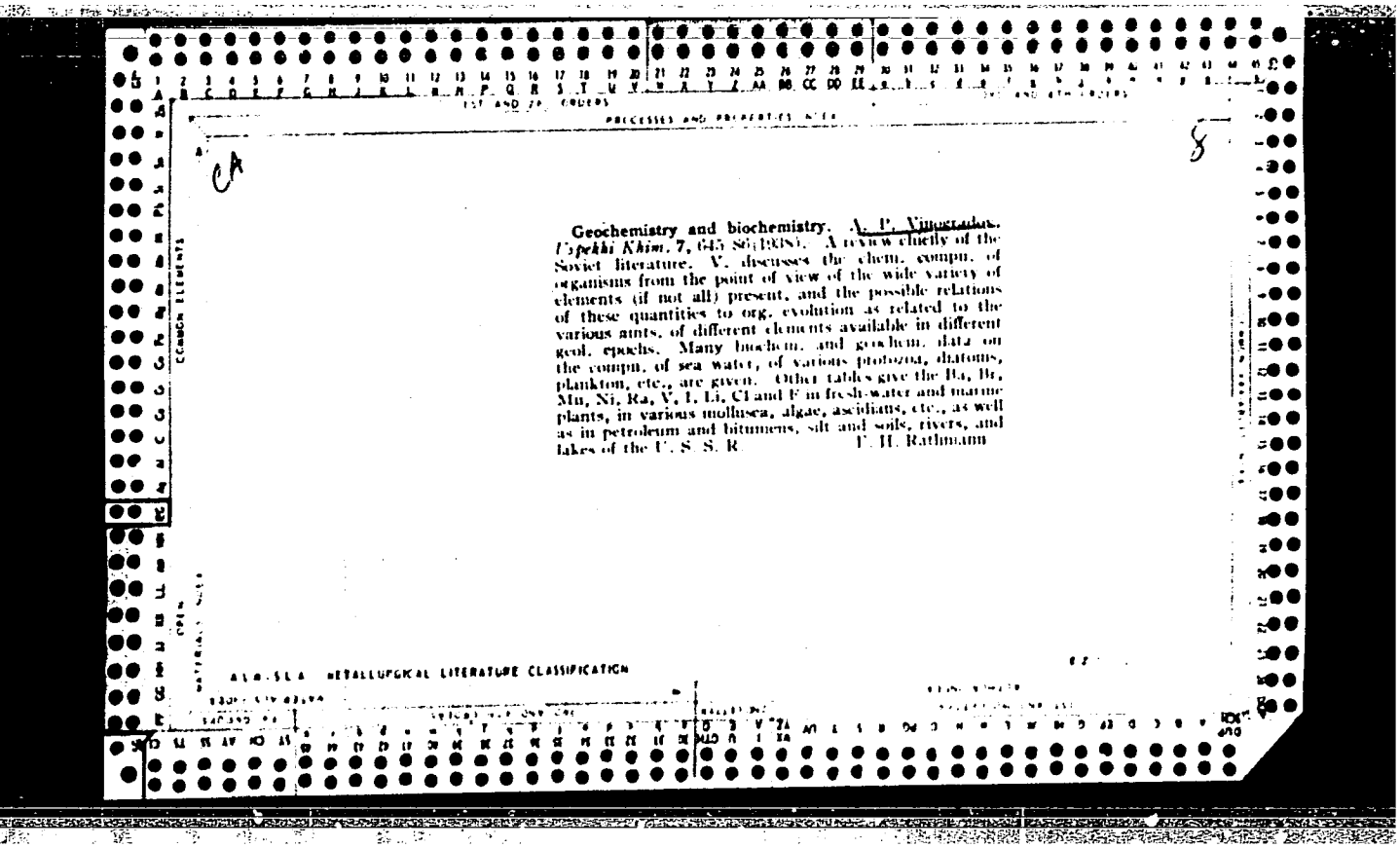
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



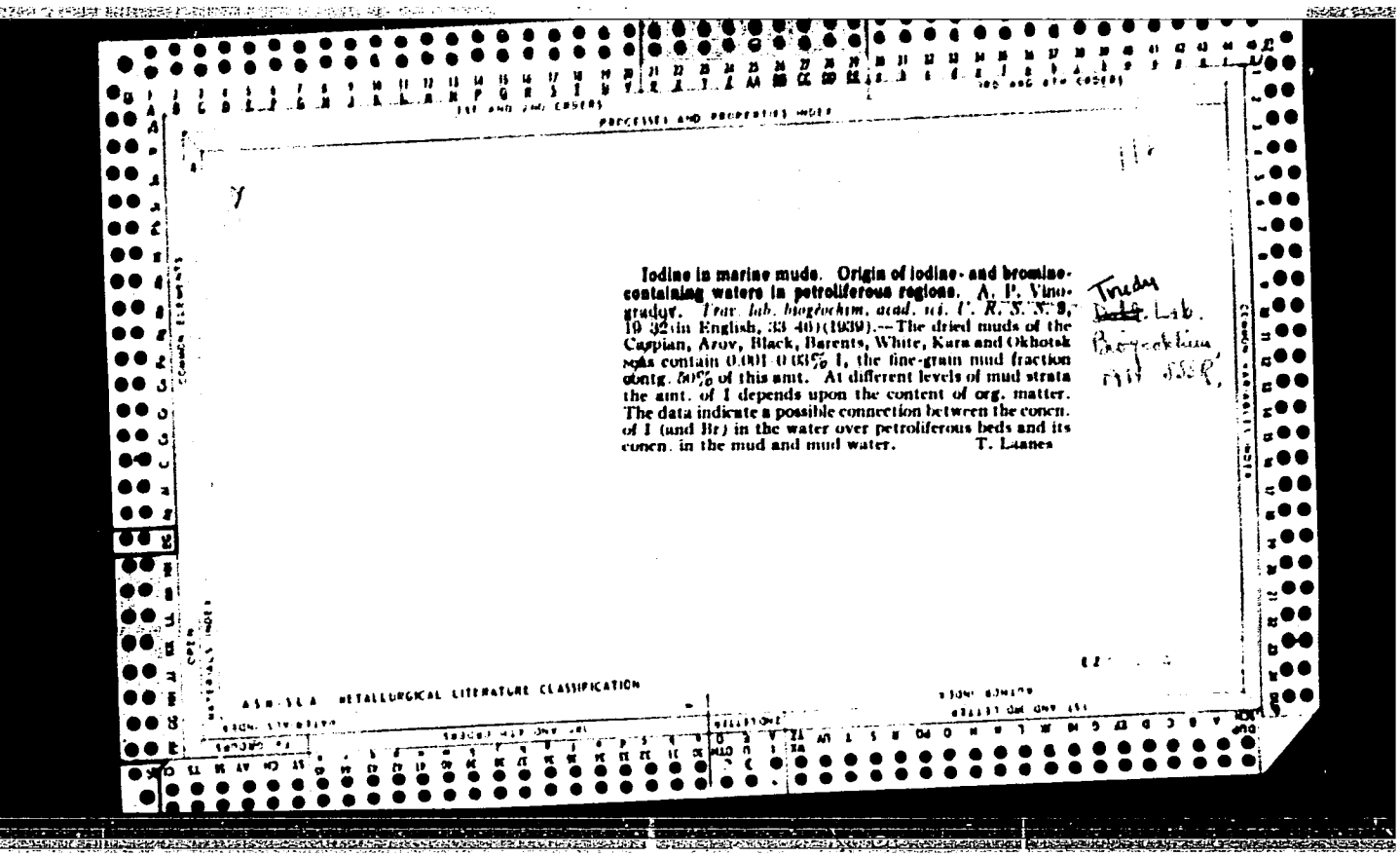
Analytical chemistry of rare elements in small concentrations. I. P. Alimarin and A. P. Vinogradov. *Zavod. Lab.* **7**, [illegible] (1938). A discussion. C. B.

VINOGRADOV, A. P.

Biogeochemical provinces and endemics. A. P. Vinogradov (Compt. rend. Acad. Sci. U.R.S.S., [illegible], 1938, 18, 283-286).--The influence of the chemical characteristics of soils, notably of excess or deficiency of biologically active constituents on the flora and on disease in plants and animals is discussed. A.G.P.



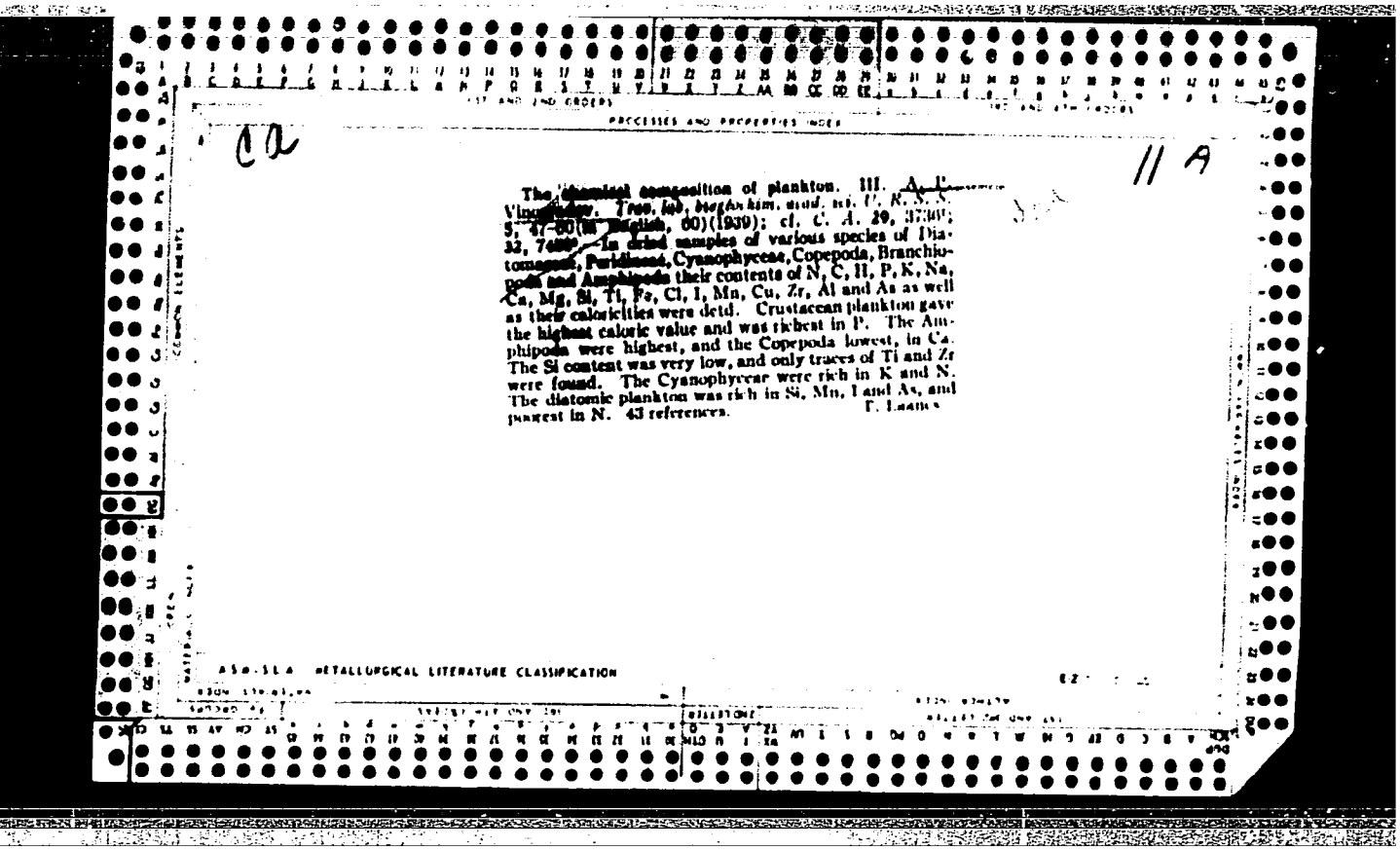
Geochemistry and biochemistry. A. P. Vinogradov. *Uspekhi Khim.* 7, 645-50(1938). A review chiefly of the Soviet literature. V. discusses the chem. compn. of organisms from the point of view of the wide variety of elements (if not all) present, and the possible relations of these quantities to org. evolution as related to the various amts. of different elements available in different geol. epochs. Many biochem. and geochem. data on the compn. of sea water, of various protozoa, diatoms, plankton, etc., are given. Other tables give the Ba, Br, Mn, Ni, Ra, V, I, Li, Cl and F in fresh-water and marine plants, in various mollusca, algae, ascidians, etc., as well as in petroleum and bitumens, silt and soils, rivers, and lakes of the U. S. S. R. F. H. Rathmann



Iodine in marine mude. Origin of iodine- and bromine-containing waters in petroliferous regions. A. P. Vinogradov. *Trav. lab. biogéochim. acad. sci. U. R. S. S.* 2, 19-32 (in English, 33-40) (1939).—The dried muds of the Caspian, Azov, Black, Barents, White, Kara and Okhotsk seas contain 0.03-0.05% I, the fine-grain mud fraction contg. 50% of this amt. At different levels of mud strata the amt. of I depends upon the content of org. matter. The data indicate a possible connection between the concn. of I (and Br) in the water over petroliferous beds and its concn. in the mud and mud water. T. Laanes

Trudy Lab. Biogeokhim. AN SSSR,

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

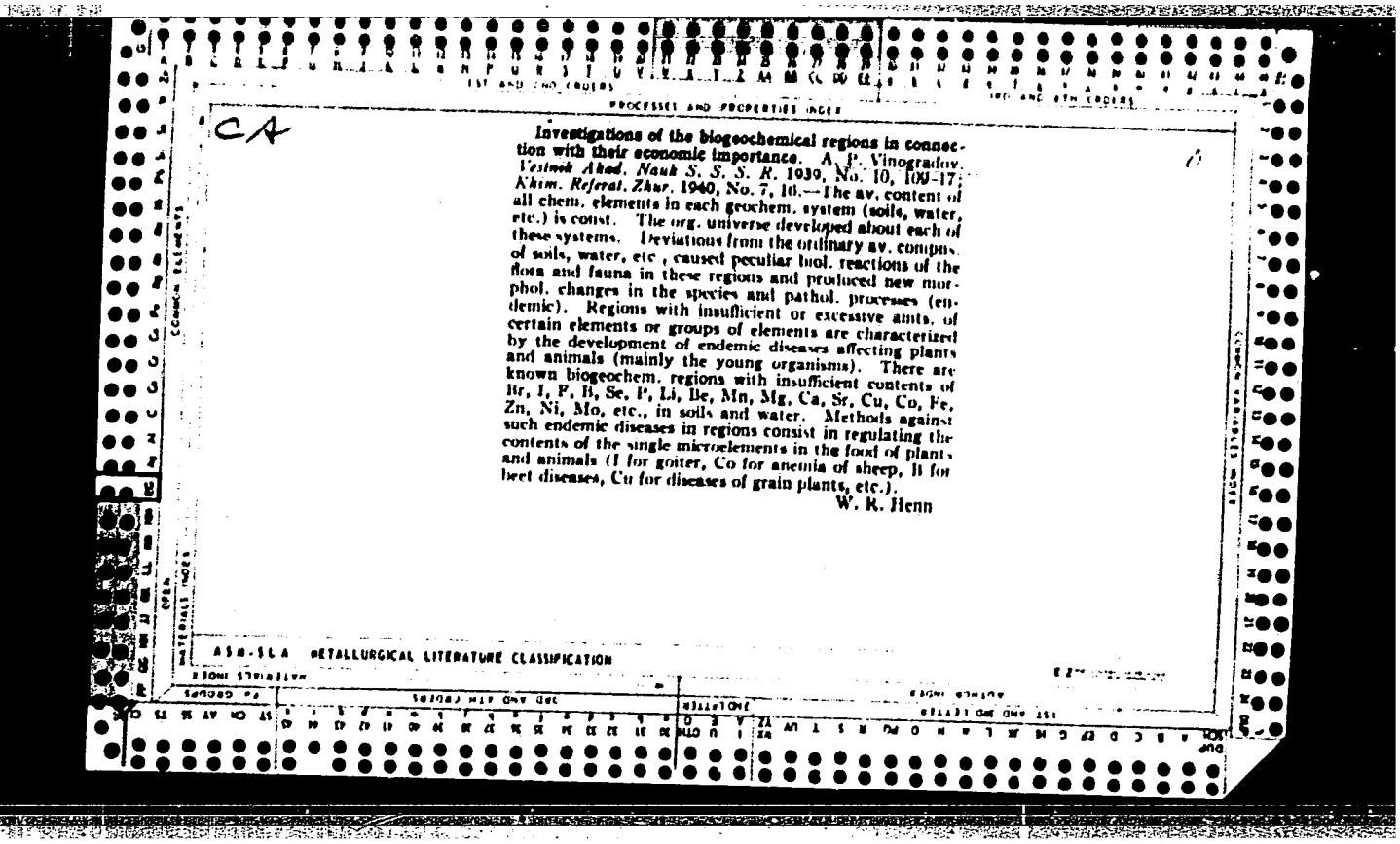


CA

11 A

The chemical composition of plankton. III. A. I. Vinogradov. *Trans. Lab. Biogeochim. Acad. Sci. U. R. S. S.* 5, 47–60(in English, 60)(1939); cf. *C. A.* 29, 3740; 33, 7489. —In dried samples of various species of Diatomaceae, Peridineae, Cyanophyceae, Copepoda, Branchiopoda and Amphipoda their contents of N, C, H, P, K, Na, Ca, Mg, Si, Ti, Fe, Cl, I, Mn, Cu, Zr, Al and As as well as their calorieities were detd. Crustacean plankton gave the highest caloric value and was richest in P. The Amphipoda were highest, and the Copepoda lowest, in Ca. The Si content was very low, and only traces of Ti and Zr were found. The Cyanophyceae were rich in K and N. The diatomic plankton was rich in Si, Mn, I and As, and poorest in N. 43 references. F. Laames

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



CA

Investigations of the biogeochemical regions in connection with their economic importance. A. P. Vinogradov. *Vestnik Akad. Nauk S. S. S. R.* 1939, No. 10, 109–17; *Khim. Referat. Zhur.* 1940, No. 7, 10.—The av. content of all chem. elements in each geochem. system (soils, water, etc.) is const. The org. universe developed about each of these systems. Deviations from the ordinary av. compns. of soils, water, etc., caused peculiar biol. reactions of the flora and fauna in these regions and produced new morphol. changes in the species and pathol. processes (endemic). Regions with insufficient or excessive amts. of certain elements or groups of elements are characterized by the development of endemic diseases affecting plants and animals (mainly the young organisms). There are known biogeochem. regions with insufficient contents of Br, I, F, B, Se, P, Li, Be, Mn, Mg, Ca, Sr, Cu, Co, Fe, Zn, Ni, Mo, etc., in soils and water. Methods against such endemic diseases in regions consist in regulating the contents of the single microelements in the food of plants and animals (I for goiter, Co for anemia of sheep, B for beet diseases, Cu for diseases of grain plants, etc.).

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VINOGRADOV, A. P.

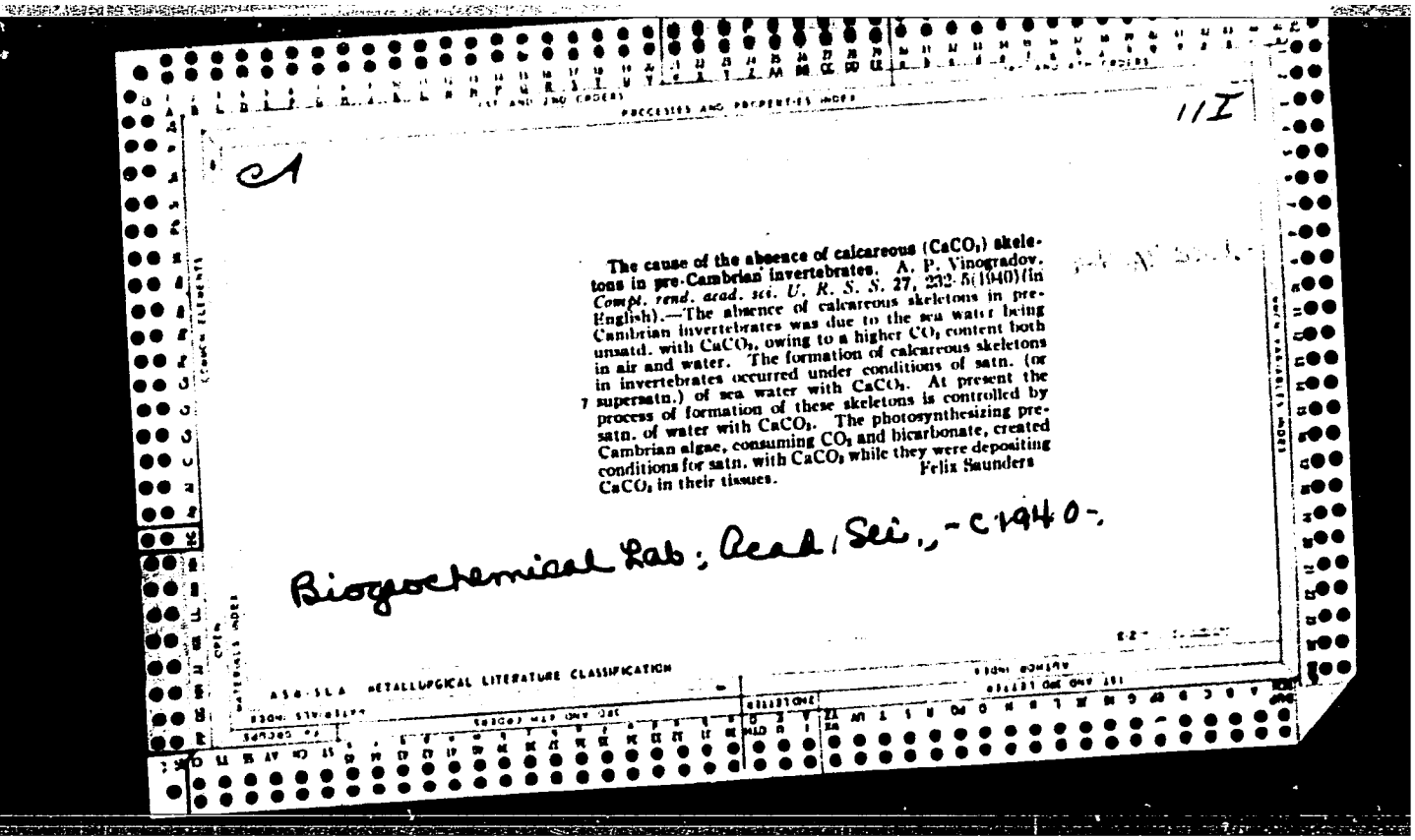
Geochemical investigation of the spreading of the Urov disease. A. P. VINOGRADOV (Compt. rend, Acad. Sci., U.R.S.S., 1939, 23 64--67). An investigation of the drinking-H_2O in regions where the Urov disease (akin to rickets) is prevalent has been carried out. "Affected" waters (i.e., those in the region where the disease is prevalent) contain much less mineral matter, and particularly Ca, than "healthy" waters. A.J.M.

Biogeochem. Lab. Mbr. Acad. Sci. c1939-.

VINOGRADOV, A. P.

"The Conference on the Chemistry of Isotopes."

Zhur. Fiz. Khim,, Vol. 14, No. 5-6, 1940.



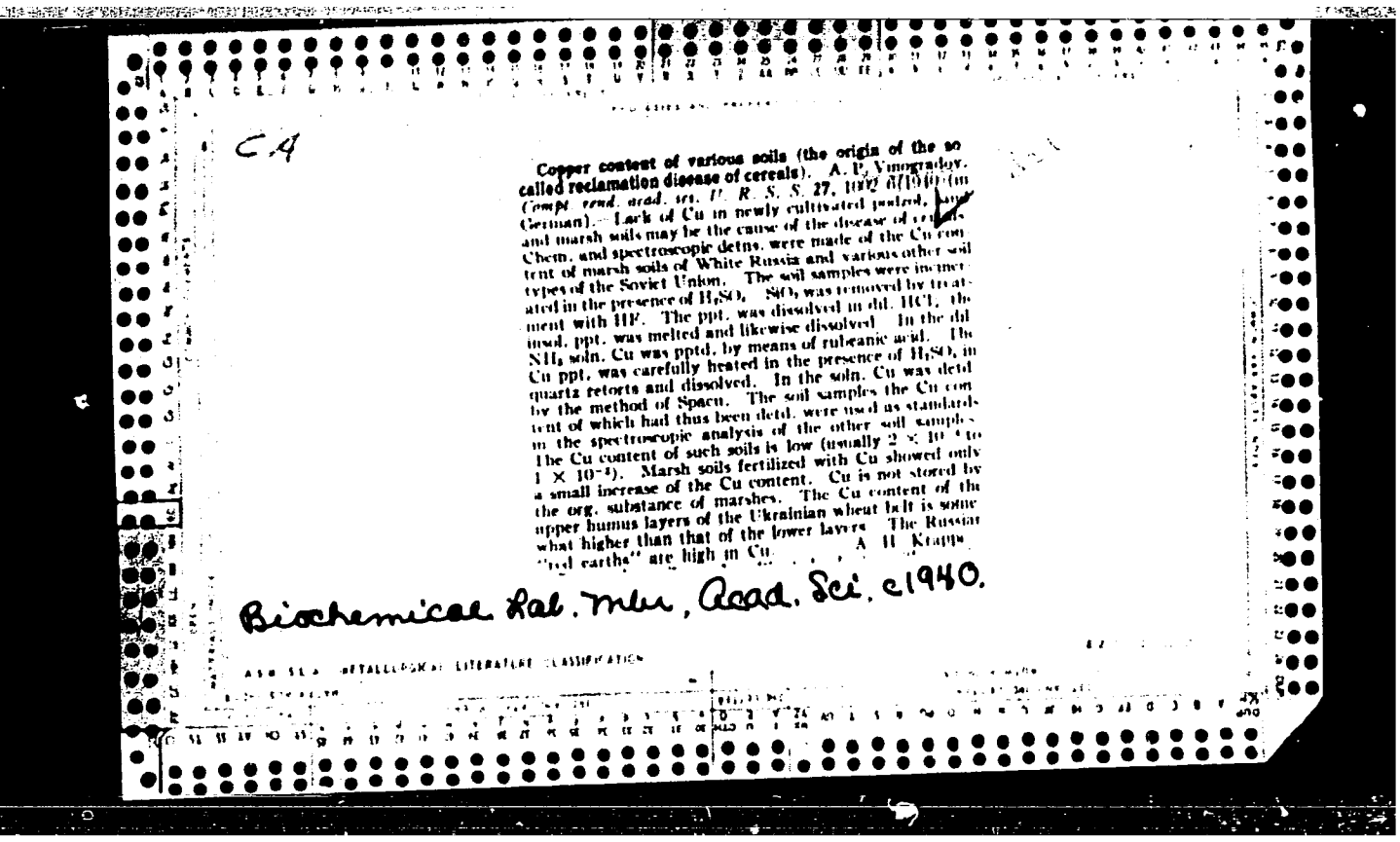
C1

III

The cause of the absence of calcareous ($CaCO_3$) skeletons in pre-Cambrian invertebrates. A. P. Vinogradov. *Compt. rend. acad. sci. U. R. S. S.* 27, 232-5(1940)(in English).—The absence of calcareous skeletons in pre-Cambrian invertebrates was due to the sea water being unsatd. with $CaCO_3$, owing to a higher CO_2 content both in air and water. The formation of calcareous skeletons in invertebrates occurred under conditions of satn. (or supersatn.) of sea water with $CaCO_3$. At present the process of formation of these skeletons is controlled by satn. of water with $CaCO_3$. The photosynthesizing pre-Cambrian algae, consuming CO_2 and bicarbonate, created conditions for satn. with $CaCO_3$ while they were depositing $CaCO_3$ in their tissues.
Felix Saunders

Biogeochemical Lab; Geol. Sci., - c 1940 -.

A56-SLA METALLURGICAL LITERATURE CLASSIFICATION

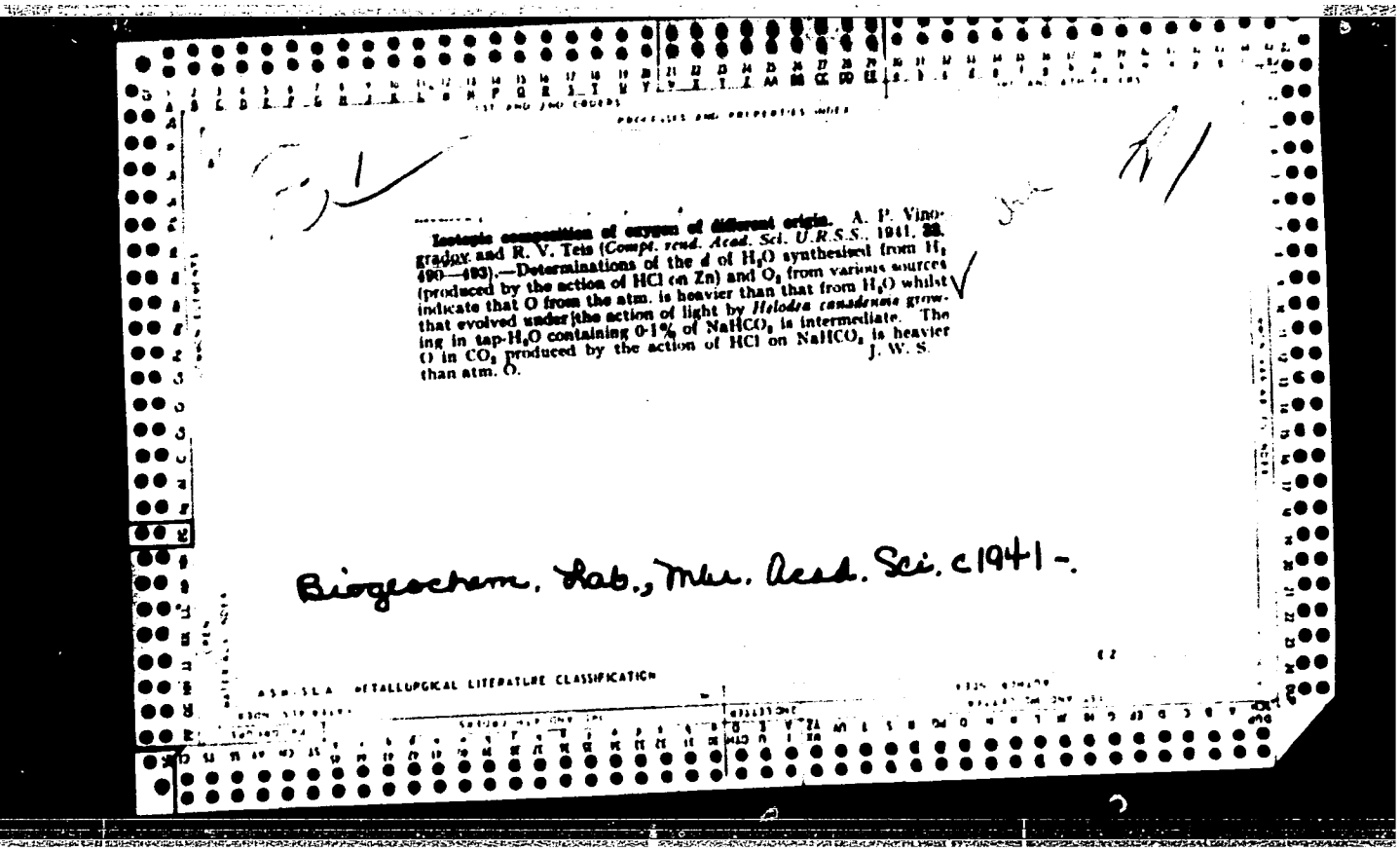


C.A

Copper content of various soils (the origin of the so called reclamation disease of cereals). A. P. Vinogradov. *Compt. rend. acad. sci. U. R. S. S.* 27, 1002-6(1940)(in German).—Lack of Cu in newly cultivated podzol, [illegible] and marsh soils may be the cause of the disease of cereals. Chem. and spectroscopic detns. were made of the Cu content of marsh soils of White Russia and various other soil types of the Soviet Union. The soil samples were incinerated in the presence of H_2SO_4. SiO_2 was removed by treatment with HF. The ppt. was dissolved in dil. HCl, the insol. ppt. was melted and likewise dissolved. In the dil NH_4 soln. Cu was ppted. by means of rubeanic acid. The Cu ppt. was carefully heated in the presence of H_2SO_4 in quartz retorts and dissolved. In the soln. Cu was detd by the method of Spacu. The soil samples the Cu content of which had thus been detd. were used as standards in the spectroscopic analysis of the other soil samples. The Cu content of such soils is low (usually 2×10^{-4} to 1×10^{-4}). Marsh soils fertilized with Cu showed only a small increase of the Cu content. Cu is not stored by the org. substance of marshes. The Cu content of the upper humus layers of the Ukrainian wheat belt is somewhat higher than that of the lower layers. The Russian "red earths" are high in Cu. A. H. Knapp

Biochemical Lab. Mem. Acad. Sci. c1940.

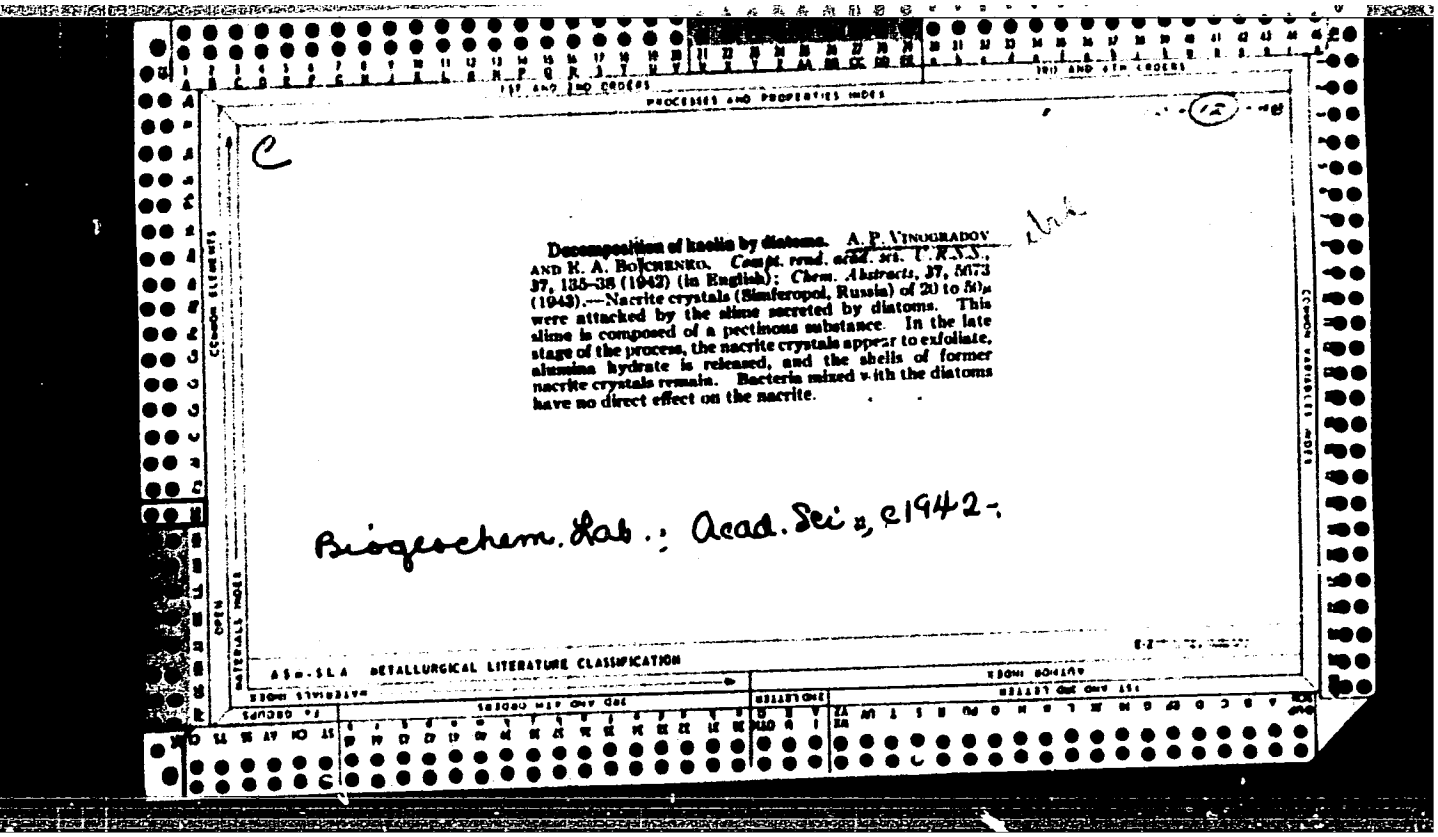
Isotopic composition of waters in metamorphic rocks and minerals. V. I. Vernadskiĭ, A. P. Vinogradov, and R. V. Teis (Compt. rend Acad. Sci. U. R. S. S., 1941, 31, 573-576).--Chlorites, talcs, and serpentines of different deposits and geological ages were used. H_2O was distilled from them at 1100°, and its d determined. In almost all cases the d was > that of standard purified tap-H_2O. In two cases, the greater d was shown to be due entirely to ^{18}O, the D content being < that of standard H_2O. A. J. A.



Isotopic composition of oxygen of different origin. A. P. Vinogradov and R. V. Teis (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, **33**, 490—493).—Determinations of the *d* of H_2O synthesised from H_2 (produced by the action of HCl on Zn) and O_2 from various sources indicate that O from the atm. is heavier than that from H_2O whilst that evolved under the action of light by *Helodea canadensis* growing in tap-H_2O containing 0·1% of $NaHCO_3$ is intermediate. The O in CO_2 produced by the action of HCl on $NaHCO_3$ is heavier than atm. O. J. W. S.

Biogeochem. Lab., Nat. Acad. Sci. c1941-.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



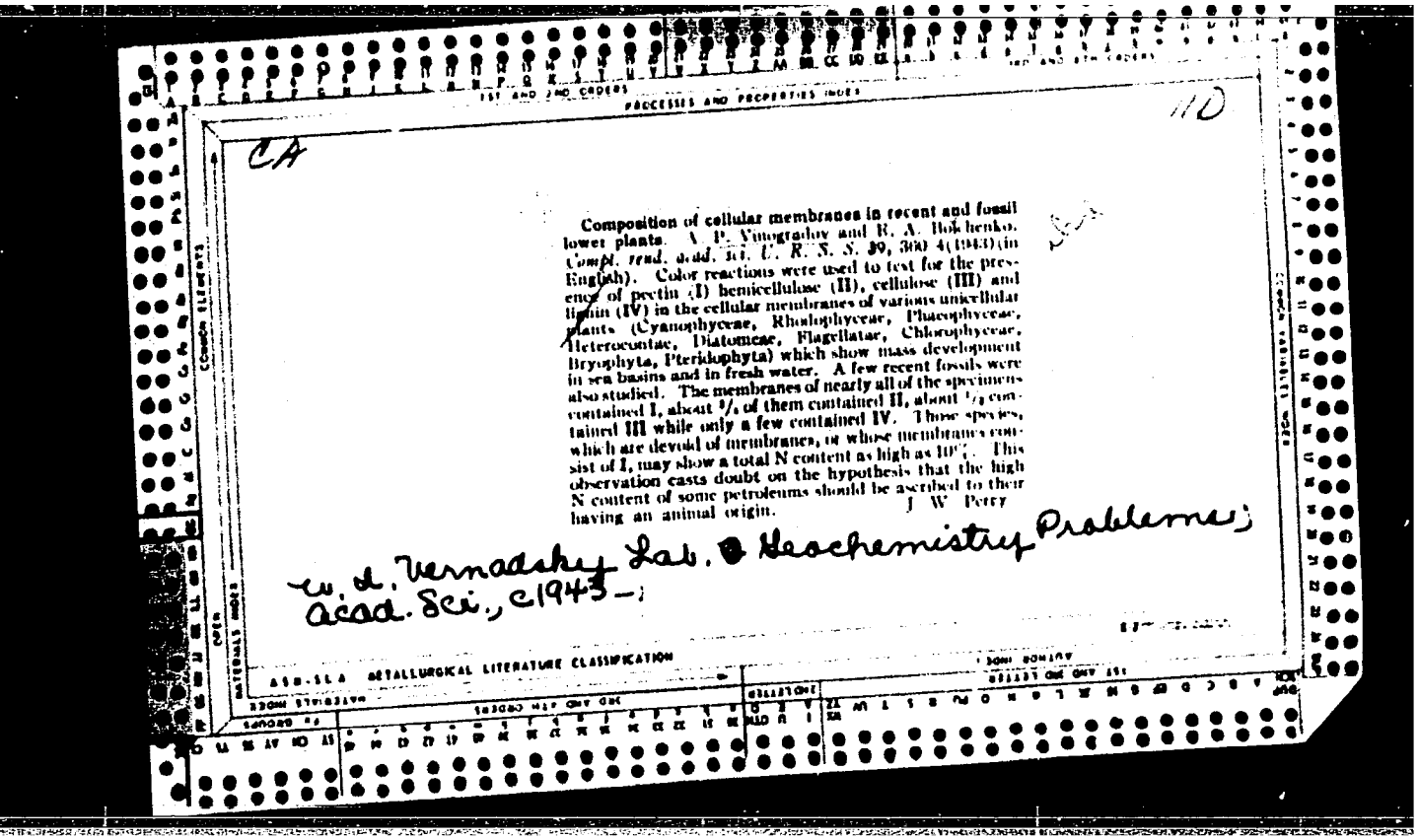
PROCESSES AND PROPERTIES INDEX

C

Decomposition of kaolin by diatoms. A. P. VINOGRADOV AND R. A. BOICHENKO. *Compt. rend. acad. sci. U.R.S.S.*, 37, 135–38 (1942) (in English); *Chem. Abstracts*, 37, 5473 (1943).—Nacrite crystals (Simferopol, Russia) of 2i) to 5i)μ were attacked by the slime secreted by diatoms. This slime is composed of a pectinous substance. In the late stage of the process, the nacrite crystals appear to exfoliate, alumina hydrate is released, and the shells of former nacrite crystals remain. Bacteria mixed with the diatoms have no direct effect on the nacrite.

Biogeochem. Lab.; Acad. Sci., 1942-

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



PROCESSES AND PROPERTIES INDEX

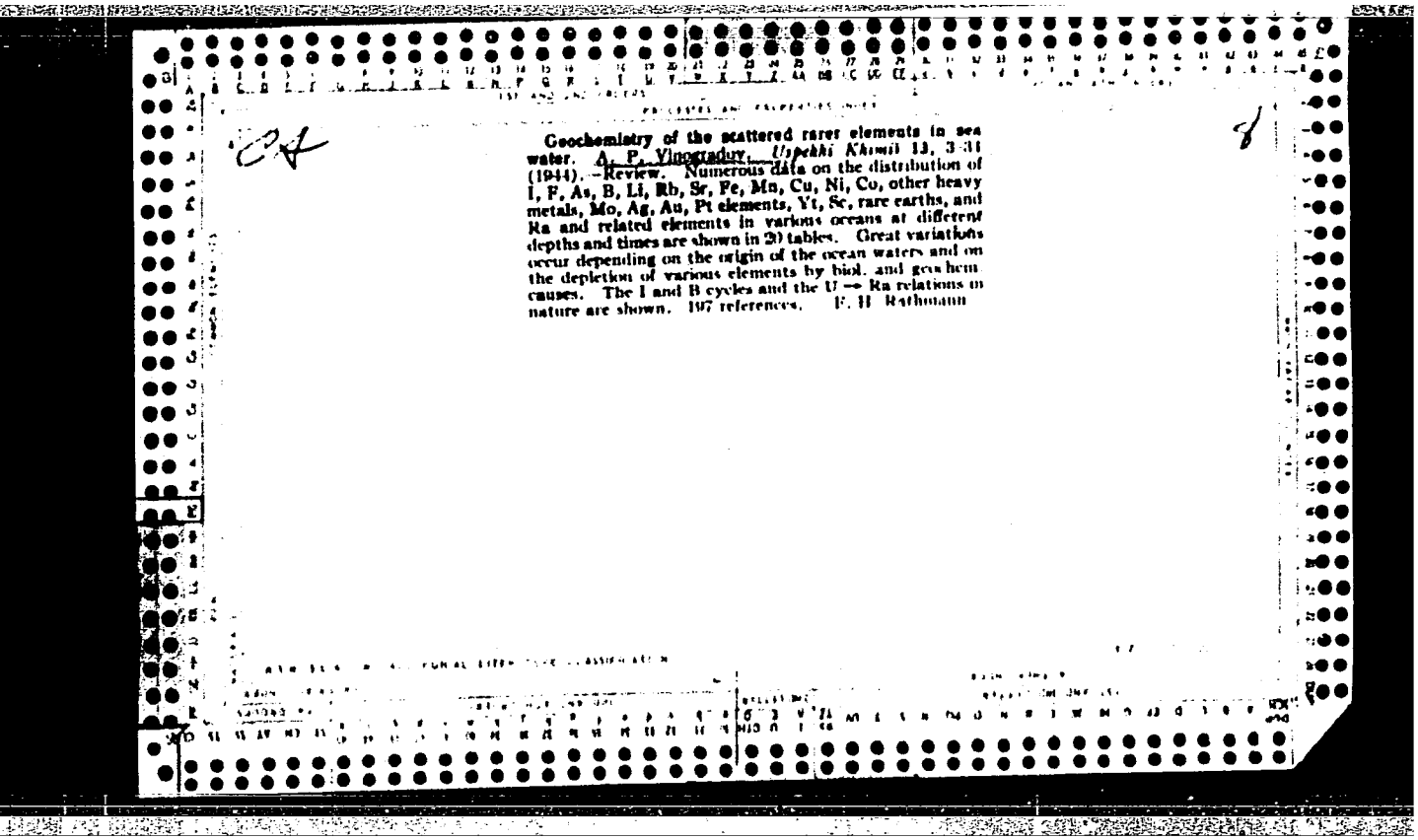
CA

11D

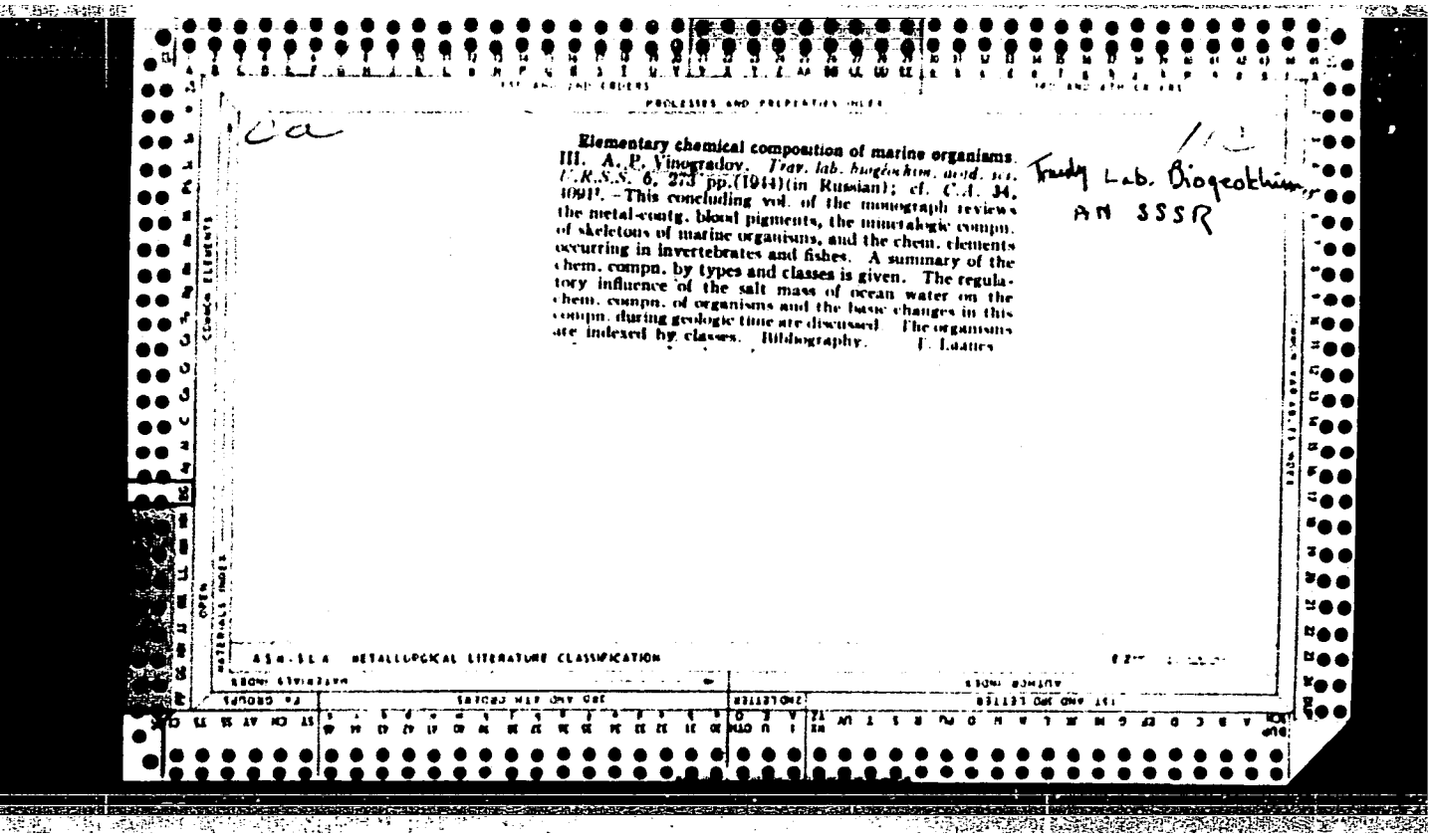
Composition of cellular membranes in recent and fossil lower plants. V. P. Vinogradov and R. A. Bokhenko. *Compt. rend. acad. sci. U. R. S. S.* 39, 360-4(1943)(in English). Color reactions were used to test for the presence of pectin (I) hemicellulose (II), cellulose (III) and lignin (IV) in the cellular membranes of various unicellular plants (Cyanophyceae, Rhodophyceae, Phaeophyceae, Heterocontae, Diatomeae, Flagellatae, Chlorophyceae, Bryophyta, Pteridophyta) which show mass development in sea basins and in fresh water. A few recent fossils were also studied. The membranes of nearly all of the specimens contained I, about ½ of them contained II, about ½ contained III while only a few contained IV. Those species which are devoid of membranes, or whose membranes consist of I, may show a total N content as high as 10%. This observation casts doubt on the hypothesis that the high N content of some petroleums should be ascribed to their having an animal origin. J. W. Perry

V. I. Vernadsky Lab. of Geochemistry (Problems) Acad. Sci., c1943-

A58-51A METALLURGICAL LITERATURE CLASSIFICATION



Geochemistry of the scattered rarer elements in sea water. A. P. Vinogradov. *Uspekhi Khimii* 13, 3-31 (1944). —Review. Numerous data on the distribution of I, F, As, B, Li, Rb, Sr, Fe, Mn, Cu, Ni, Co, other heavy metals, Mo, Ag, Au, Pt elements, Yt, Sc, rare earths, and Ra and related elements in various oceans at different depths and times are shown in 20 tables. Great variations occur depending on the origin of the ocean waters and on the depletion of various elements by biol. and geochem. causes. The I and B cycles and the U → Ra relations in nature are shown. 197 references. F. H. Rathmann



Ca

Elementary chemical composition of marine organisms. III. A. P. Vinogradov. *Trav. lab. biogéochim. océanol. Acad. Sci. U.R.S.S.* 6, 273 pp.(1944)(in Russian); cf. *C.A.* 34, 4091. - This concluding vol. of the monograph reviews the metal-contg. blood pigments, the mineralogic compn. of skeletons of marine organisms, and the chem. elements occurring in invertebrates and fishes. A summary of the chem. compn. by types and classes is given. The regulatory influence of the salt mass of ocean water on the chem. compn. of organisms and the basic changes in this compn. during geologic time are discussed. The organisms are indexed by classes. Bibliography. T. Laatiss

Trudy Lab. Biogeokhim. AN SSSR

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Chlorine-bromine coefficient of underground waters. A. P. Vinogradov. (*Compt. rend. Acad. Sci. U.R.S.S.*, 1944, 44, 87—89). —The factors which bring about variations in the Cl/Br ratio (r) of underground waters from the val. (~300) obtained in sea-H_2O are discussed. Underground waters are subdivided into derivatives of (1) normal sea-H_2O with $r \sim 300$, (2) residual brine of sea salt lakes with $r < 300$, and (3) a solution of NaCl deposits with $r > 300$. C. R. H.

Dokl. AN SSSR.

W. I. Vernadsky Lab. Geochem. Problems; Cor. Mem. Acad. Sci., c1944-.

VINOGRADOV, A. P.

Apr 1946

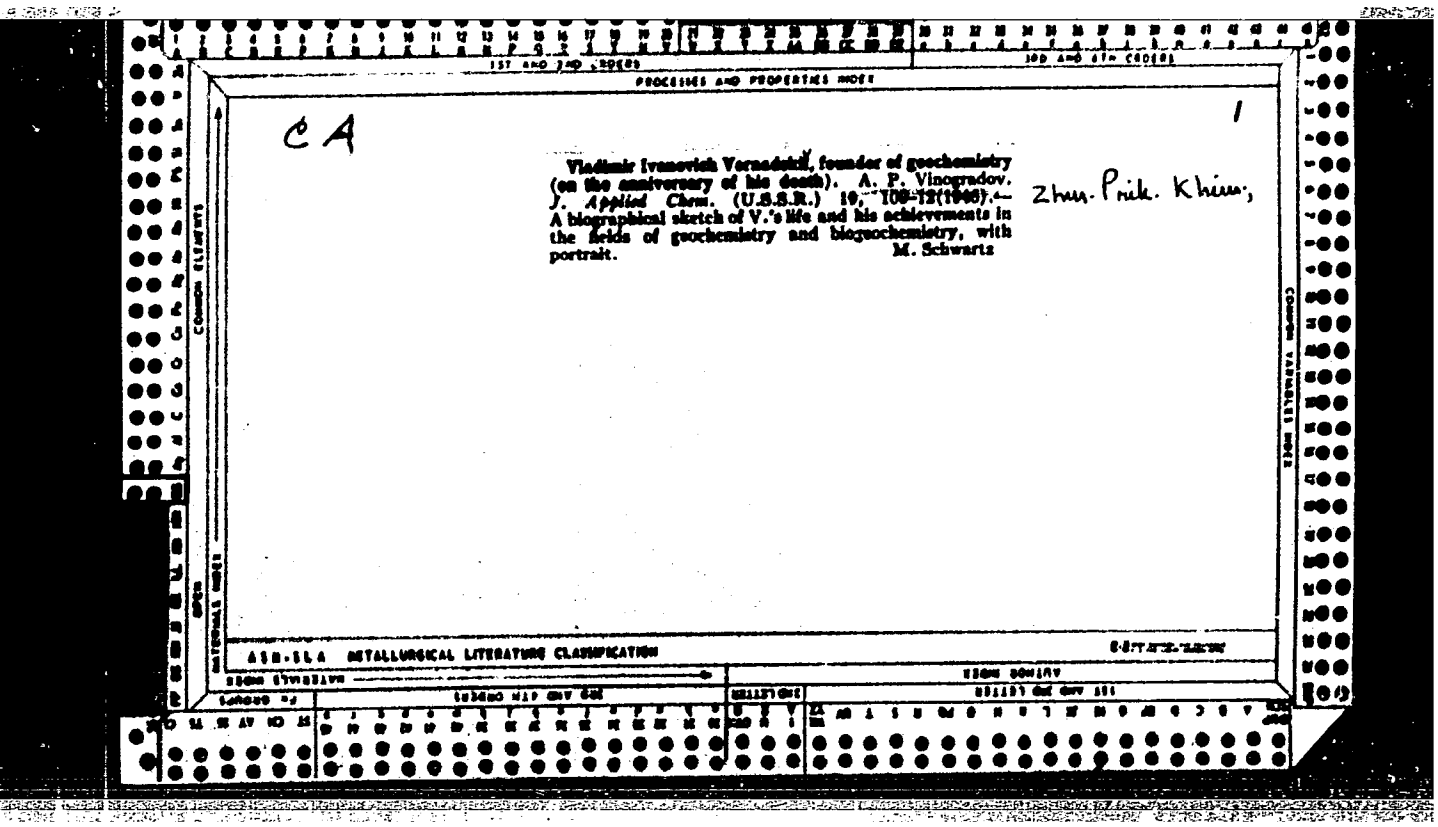
USSR/Medicine - Goiter
Medicine - Iodine

"Geochemical Conditions in the Regions of Endemic Goiter," A. P. Vinogradov, 14 pp

"Izv. Ak. Nauk Geograf i Geofiz.", Vol X, No 4

Study of the geochemistry of iodine, and an explanation of the spreading of simple endemic goiter. Data on goiter in the Soviet Union and its connection with the composition of the soil.

13T10



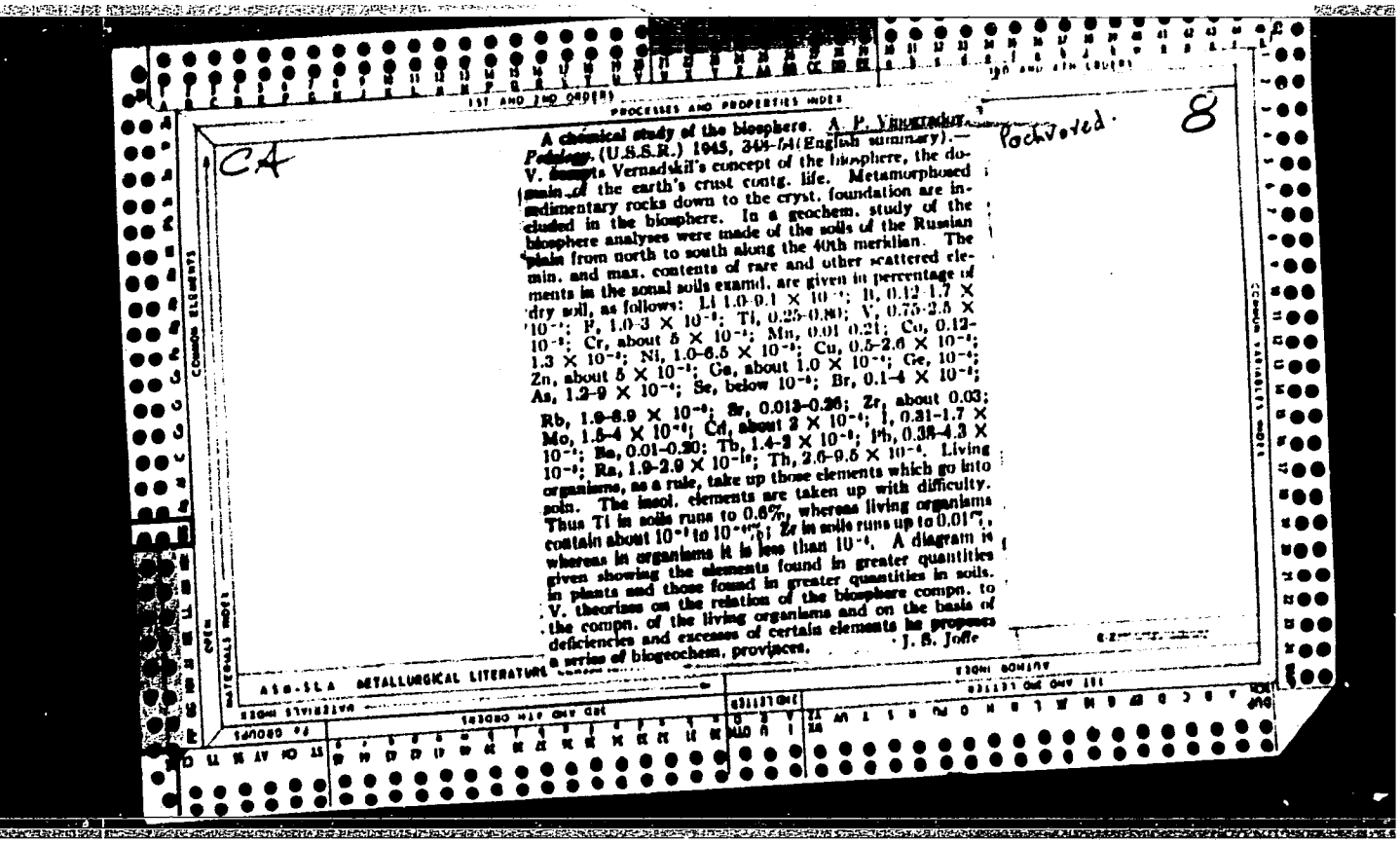
CA

1

Vladimir Ivanovich Vernadskiĭ, founder of geochemistry (on the anniversary of his death). A. P. Vinogradov. *J. Applied Chem.* (U.S.S.R.) 19, 103-12(1946).— A biographical sketch of V.'s life and his achievements in the fields of geochemistry and biogeochemistry, with portrait. M. Schwartz

Zhur. Prikl. Khim.,

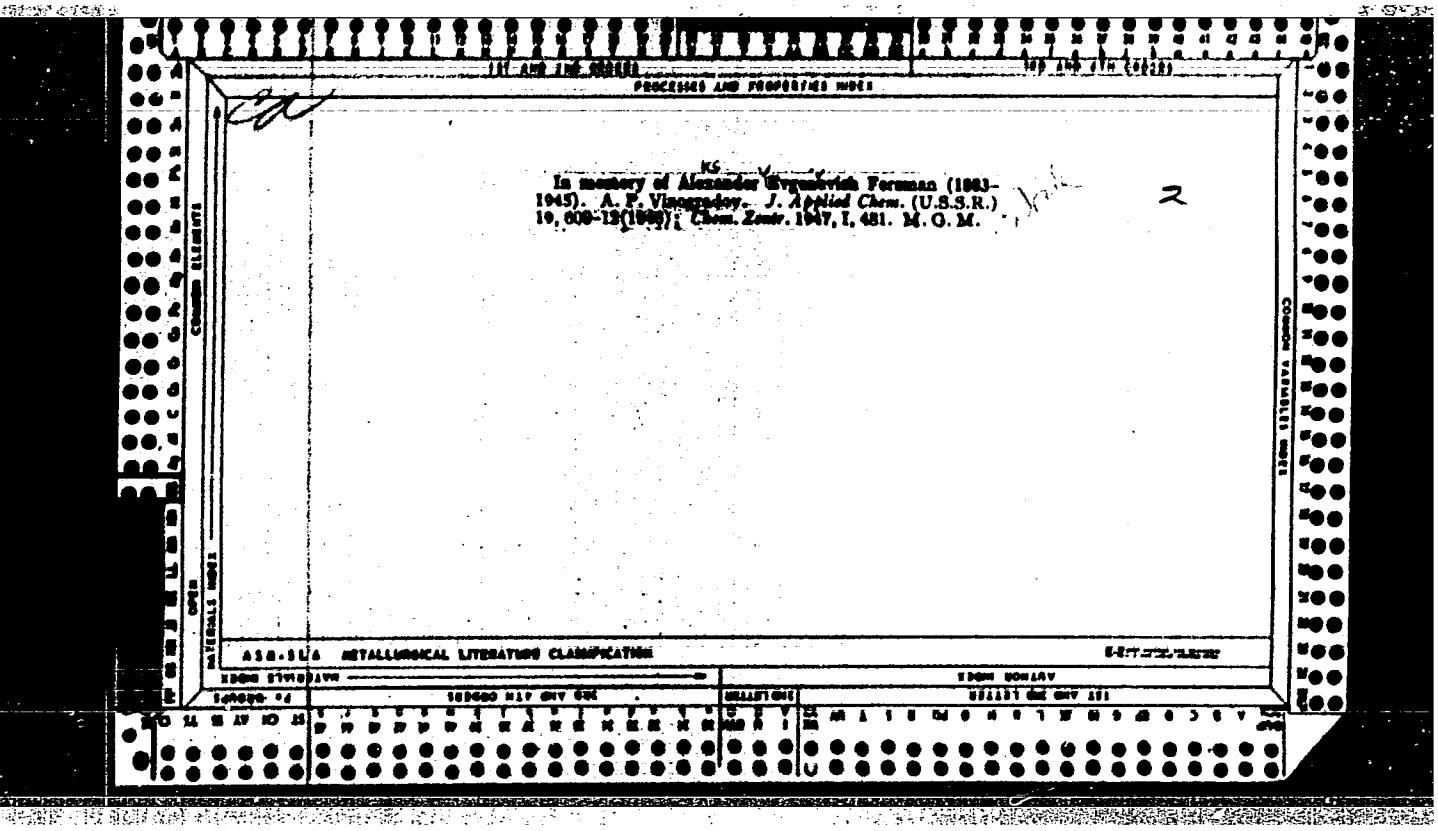
ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION



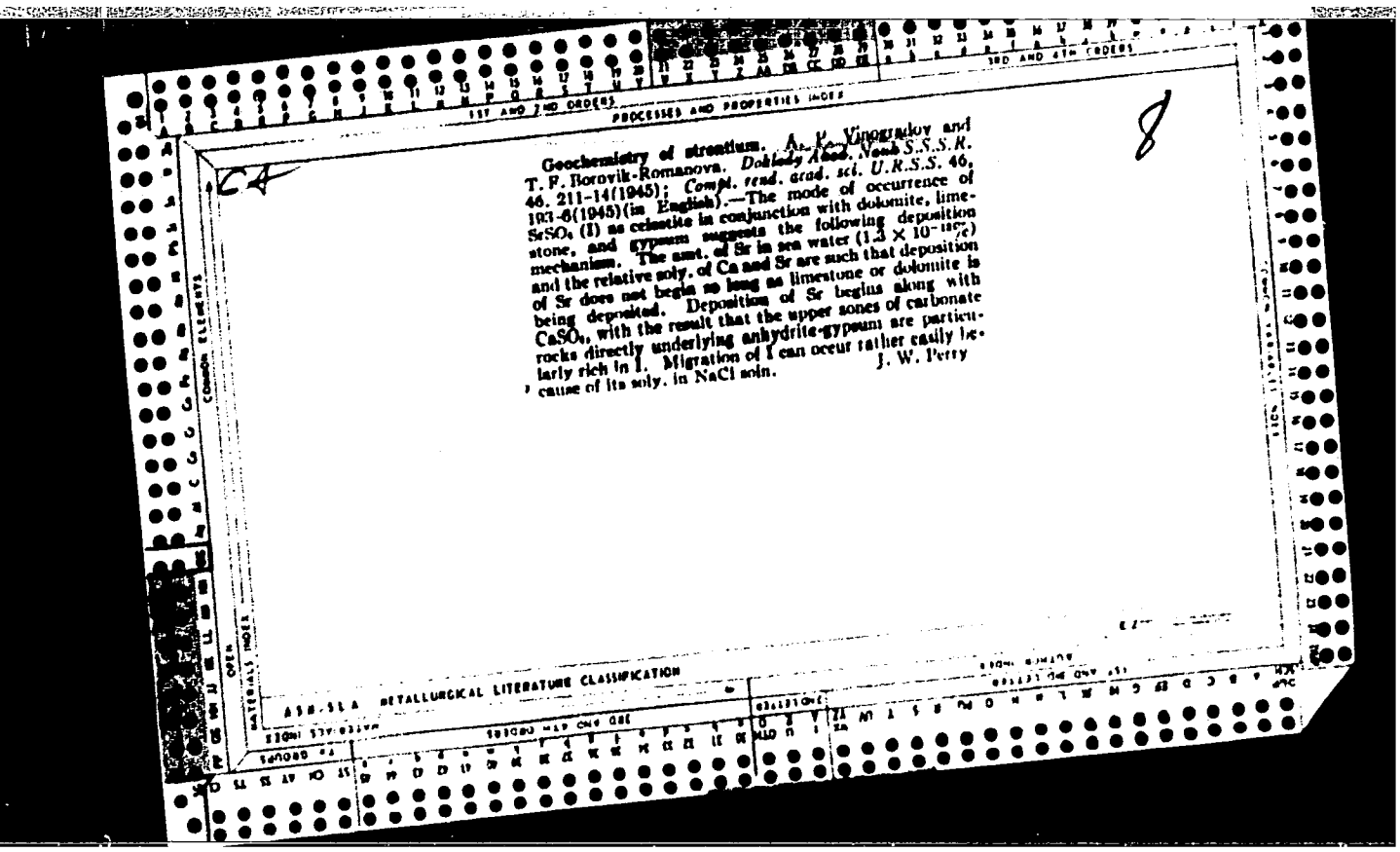
CA

A chemical study of the biosphere. A. P. Vinogradov. *Pedology* (U.S.S.R.) 1945, 349–54 (English summary).—V. accepts Vernadskii's concept of the biosphere, the domain of the earth's crust contg. life. Metamorphosed sedimentary rocks down to the cryst. foundation are included in the biosphere. In a geochem. study of the biosphere analyses were made of the soils of the Russian plain from north to south along the 40th meridian. The min. and max. contents of rare and other scattered elements in the zonal soils examd. are given in percentage of dry soil, as follows: Li 1.0–0.1 × 10^{-4}; B, 0.12–1.7 × 10^{-4}; F, 1.0–3 × 10^{-4}; Ti, 0.25–0.80; V, 0.75–2.5 × 10^{-4}; Cr, about 5 × 10^{-4}; Mn, 0.01–0.21; Co, 0.12–1.3 × 10^{-4}; Ni, 1.0–6.5 × 10^{-4}; Cu, 0.5–2.6 × 10^{-4}; Zn, about 5 × 10^{-4}; Ga, about 1.0 × 10^{-4}; Ge, 10^{-4}; As, 1.2–9 × 10^{-4}; Se, below 10^{-4}; Br, 0.1–4 × 10^{-4}; Rb, 1.9–8.9 × 10^{-4}; Sr, 0.013–0.26; Zr, about 0.03; Mo, 1.5–4 × 10^{-4}; Cd, about 2 × 10^{-4}; I, 0.21–1.7 × 10^{-4}; Ba, 0.01–0.20; Tb, 1.4–2 × 10^{-4}; Pb, 0.38–4.3 × 10^{-4}; Ra, 1.9–2.9 × 10^{-12}; Th, 2.6–9.5 × 10^{-4}. Living organisms, as a rule, take up those elements which go into soln. The insol. elements are taken up with difficulty. Thus Ti in soils runs to 0.6%, whereas living organisms contain about 10^{-1} to 10^{-2}%; Zr in soils runs up to 0.01%, whereas in organisms it is less than 10^{-4}. A diagram is given showing the elements found in greater quantities in plants and those found in greater quantities in soils. V. theorizes on the relation of the biosphere compn. to the compn. of the living organisms and on the basis of deficiencies and excesses of certain elements he proposes a series of biogeochem. provinces. J. S. Joffe

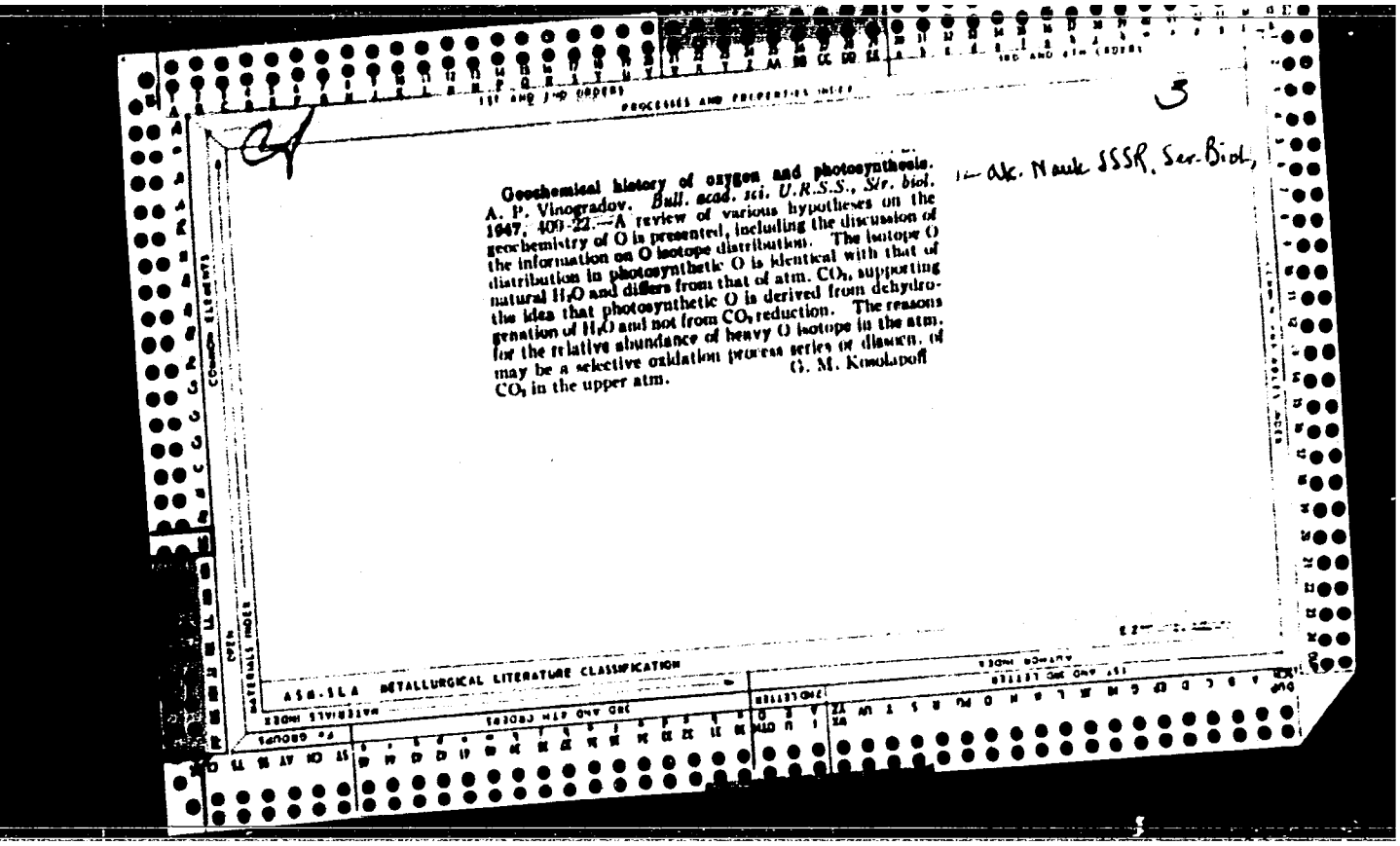
Pochvoved. 8



In memory of Alexander Evgenievich Fersman (1883-1945). A. P. Vinogradov. *J. Applied Chem.* (U.S.S.R.) 19, 609-12(1946); *Chem. Zentr.* 1947, I, 481. M. G. M.



Geochemistry of strontium. A. P. Vinogradov and T. F. Borovik-Romanova. *Doklady Akad. Nauk S.S.S.R.* 46, 211-14(1945); *Compt. rend. acad. sci. U.R.S.S.* 46, 193-6(1945)(in English).—The mode of occurrence of $SrSO_4$ (I) as celestite in conjunction with dolomite, limestone, and gypsum suggests the following deposition mechanism. The amt. of Sr in sea water (1.3×10^{-1}%) and the relative soly. of Ca and Sr are such that deposition of Sr does not begin so long as limestone or dolomite is being deposited. Deposition of Sr begins along with $CaSO_4$, with the result that the upper zones of carbonate rocks directly underlying anhydrite-gypsum are particularly rich in I. Migration of I can occur rather easily because of its soly. in NaCl soln. J. W. Perry



Geochemical history of oxygen and photosynthesis. A. P. Vinogradov. *Bull. acad. sci. U.R.S.S., Sér. biol.* 1947, 409-22.—A review of various hypotheses on the geochemistry of O is presented, including the discussion of the information on O isotope distribution. The isotope O distribution in photosynthetic O is identical with that of natural H_2O and differs from that of atm. CO_2, supporting the idea that photosynthetic O is derived from dehydrogenation of H_2O and not from CO_2 reduction. The reasons for the relative abundance of heavy O isotope in the atm. may be a selective oxidation process series of diagram. of CO_2 in the upper atm.
G. M. Kondratieff

1 – Ak. Nauk SSSR, Ser. Biol.

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VINOGRADOV, A. P.

"Boron in the Soils of the Soviet Union,"

Pedology, No. 2, 1947.
Pochvoved.,

VINOGRADOV, A. P.

USSR/Geochemistry 1 May 1947
Minerals - Chemical Properties

"Isotopic Composition of Oxygen in Certain Minerals," A P Vinogradov, E I Dontsova, 2 pp

"Dok Akad Nauk USSR Nov Ser" Vol LVI, No 4

Minerals investigated are cuprite, magnetite, and chromite.

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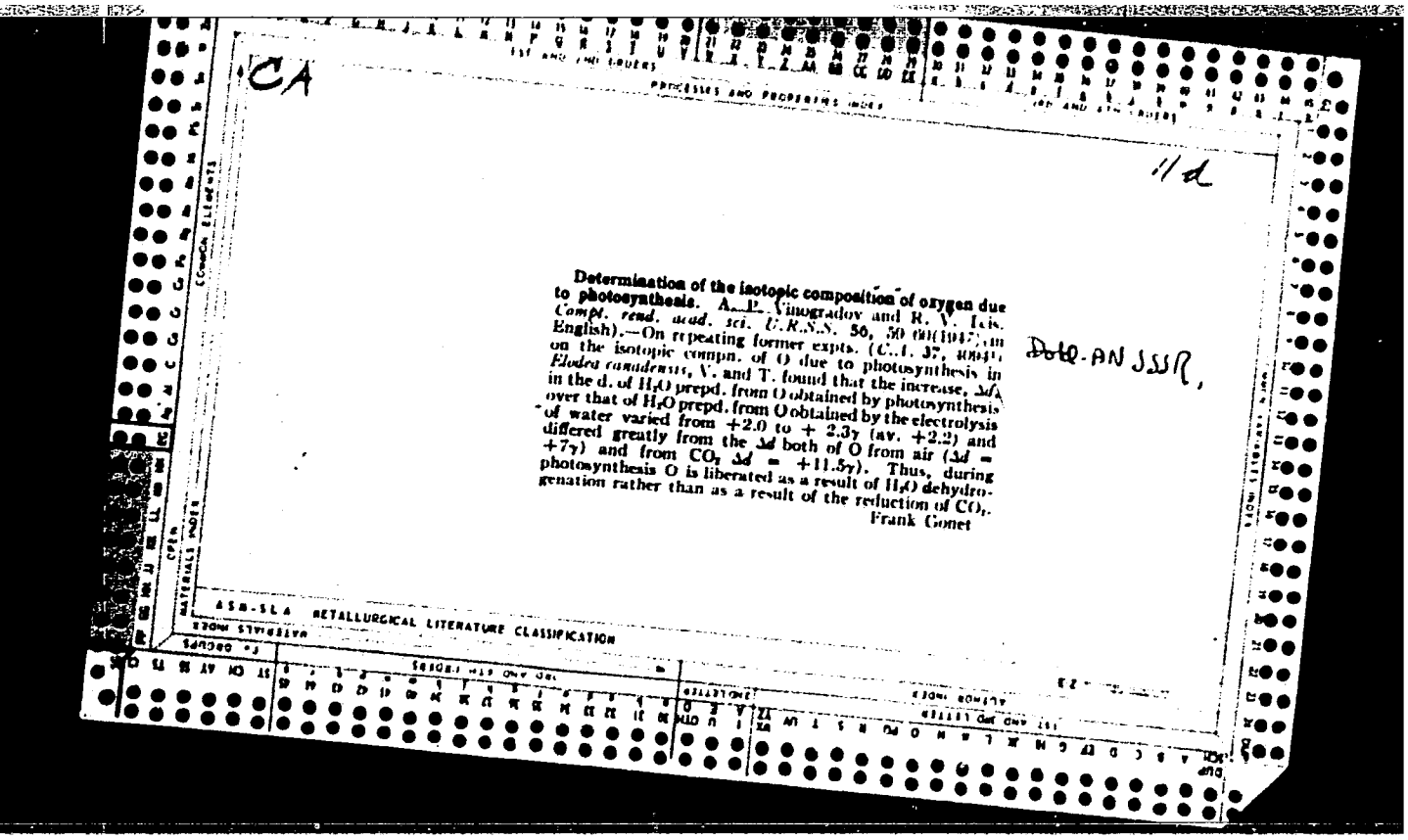

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11 d

Determination of the isotopic composition of oxygen due to photosynthesis. A. P. Vinogradov and R. V. Teis. *Compt. rend. acad. sci. U.R.S.S.* 56, 59 60(1947); (in English).—On repeating former expts. (*C.A.* 37, 4084) on the isotopic compn. of O due to photosynthesis in *Elodea canadensis*, V. and T. found that the increase, $\Delta\delta$, in the d. of H_2O prepd. from O obtained by photosynthesis over that of H_2O prepd. from O obtained by the electrolysis of water varied from +2.0 to + 2.3γ (av. +2.2) and differed greatly from the $\Delta\delta$ both of O from air ($\Delta\delta$ = +7γ) and from CO_2 $\Delta\delta$ = +11.5γ). Thus, during photosynthesis O is liberated as a result of H_2O dehydrogenation rather than as a result of the reduction of CO_2.
Frank Gonet

Dolg-AN USSR,

CA

8

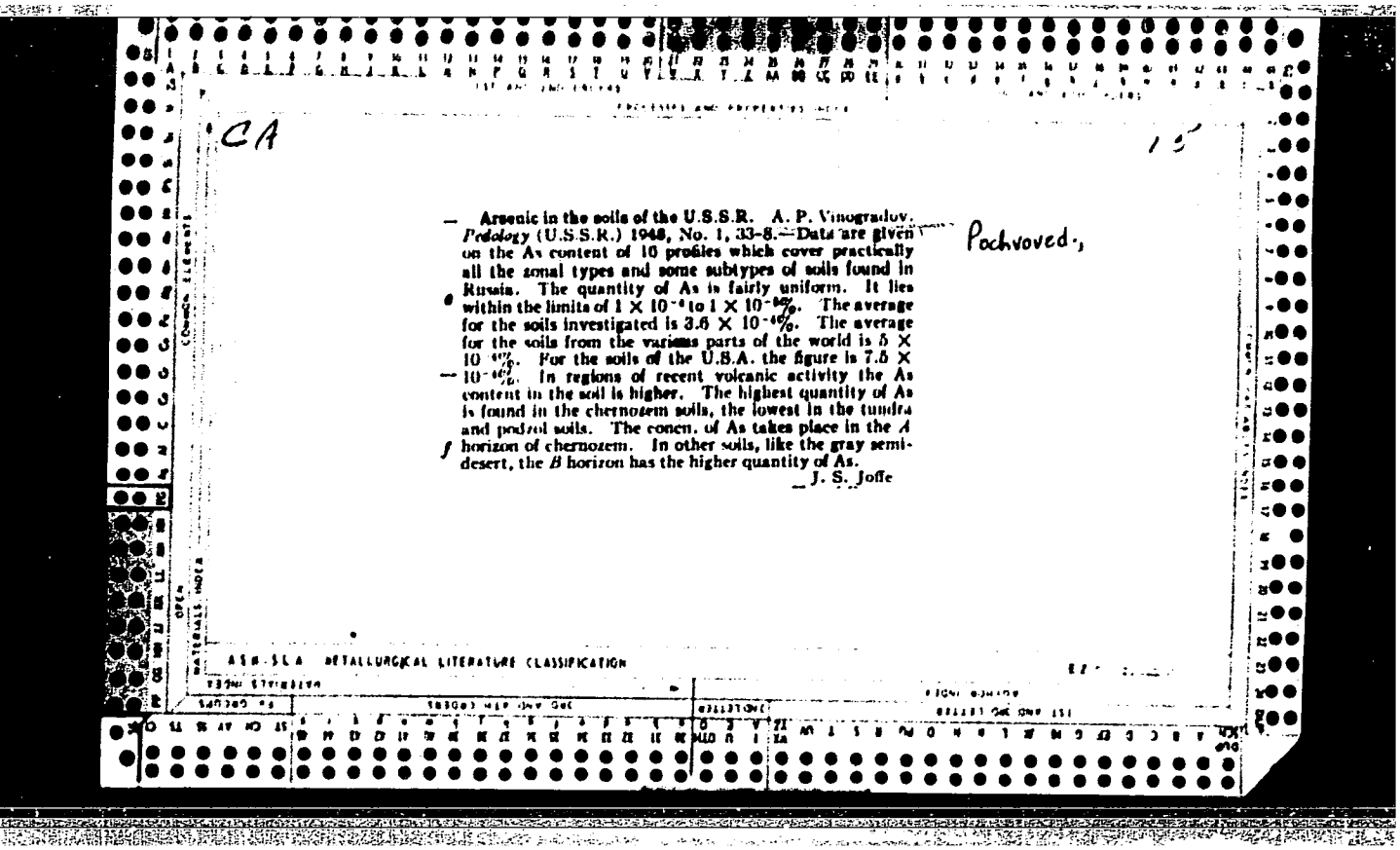
Isotopic composition of oxygen in aluminosilicates of mineral deposits. A. P. Vinogradov and E. I. Donitsova (V. Vernadskii Geochem. Inst., Leningrad). *Doklady Akad. Nauk S.S.S.R.* **58**, 83–4 (1947).—Examn. of the isotopic O compn. in minerals by heating finally to 2000° with C and bringing the resulting CO into contact with H_2 over Ni-Co catalyst to form H_2O which was analyzed densitometrically showed that the ancient basic and acidic rocks (granite, basalt, dolerite, etc.) correspond in their O isotope distribution to that found in water. Hence, no isotope segn. apparently took place during the formation of the hard silicate crust and the aq. vapor or liquid phase in the early geol. eras. The apparent isotopic differences that have been found occur only in the biosphere where the exchange processes are proceeding under the attack of atm. O, circulating H_2O, etc.

G. M. Kosolapoff

CA

2

Distribution of chemical elements in subterranean waters of various origins. (Significance of coefficients of proportionality.) A. P. Vinogradov. *Trudy Lab. Geokhgeol. Problem., im. V. V. Dokuchaeva*, 1, 26-35(1946).—The ratio between chem. elements or ions of similar physicochem. properties and particularly the ratios between individual chem. elements and their rare or widely-disseminated associated chem. elements is used to throw light on the unsolved problem of the genesis of various natural waters (fresh, mineral, and sea). The ratios used are: Ca-Sr, Ba-Sr, Ra-Ba, Na-Li, K-Li, K-Rb, B-Cl, and Cl-Br. Iodine is exceptional so that the ratios Cl-I and Br-I are not of the same significance for this purpose. The 25 waters whose analyses are listed were collected in 1936 from 2 Russian regions especially for the detn. of their content of widely-disseminated chem. elements. Sr and Li were detd. by the T. F. Borovik-Romanova spectrographic method (*C.A.* 33, 7495; *C.A.* 37, 310), with an error of 12%; Br and I, by the method of L. S. Selivanov and K. V. Menshikhkii (*C.A.* 32, 717). Boron was detd. directly by the method of Tsvitkin (*C.A.* 34, 4308; 37, 1609; and 40, 5329) with an error of 10%. In addn., many published water analyses contg. data for deng. these ratios are quoted, including 5 from Clarke (*C.A.* 10, 1889). V. H. Gottschalk



CA

15

— Arsenic in the soils of the U.S.S.R. A. P. Vinogradov. *Pedology* (U.S.S.R.) 1948, No. 1, 33-8.—Data are given on the As content of 10 profiles which cover practically all the zonal types and some subtypes of soils found in Russia. The quantity of As is fairly uniform. It lies within the limits of 1×10^{-4} to 1×10^{-3}%. The average for the soils investigated is 3.6×10^{-4}%. The average for the soils from the various parts of the world is 5×10^{-4}%. For the soils of the U.S.A. the figure is 7.5×10^{-4}%. In regions of recent volcanic activity the As content in the soil is higher. The highest quantity of As is found in the chernozem soils, the lowest in the tundra and podzol soils. The concn. of As takes place in the *A* horizon of chernozem. In other soils, like the gray semi-desert, the *B* horizon has the higher quantity of As.

— J. S. Joffe

Pochvoved.,

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

VINOGRADOV, A. P.

PA 3/49T2

USSR/Academy of Sciences
Chemistry - Analysis

Aug '48

"Works of the Commission on Analytical Chemistry," edited by A. P. Vinogradov, Corr Mem, Acad Sci USSR; reviewed by Prof I. P. Alimarin, Dr Chem Sci, 12 pp

"Zavod Lab" Vol XIV, No 8

First volume of series devoted to original articles and surveys of existing knowledge. Chief defects: (1) Work of Russian analysts not fully treated; (2) relative merits of various methods not indicated; (3) haphazard selection of material. Criticizes eight articles in detail. Publication of Acad Sci

3/49T2

USSR/Academy of Sciences (Contd)

Aug 48

USSR, Moscow, 1948, 195 pp.

3/49T2

VINOGRADOV, A. P.

1 Mar 1948

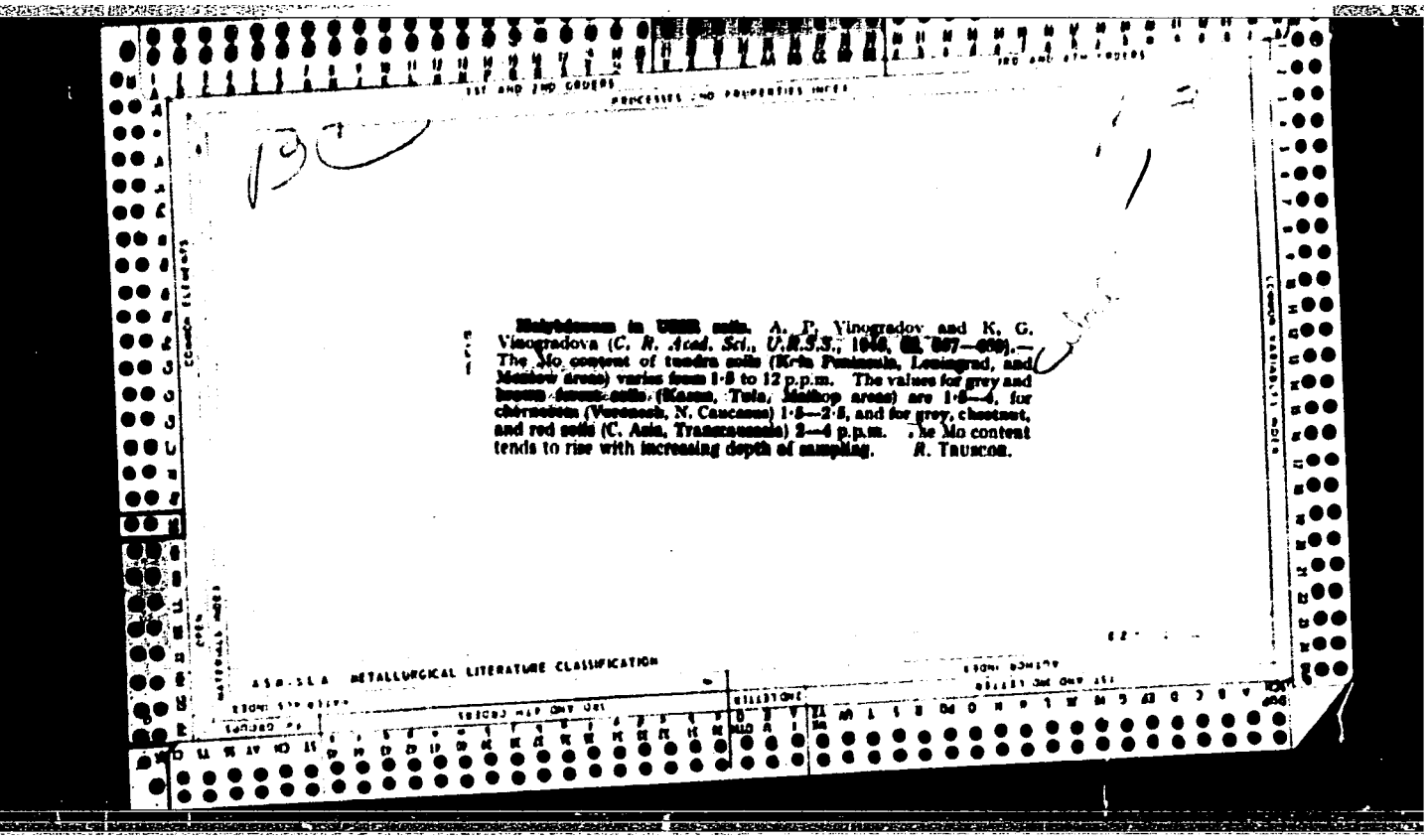
USSR/Soil Studies
Fluorine

"Fluorine in Soils of the USSR," A. P. Vinogradov, Corr Mem, Acad Sci USSR; V. V. Danilova, Lab Geochem Problems imeni V. I. Vernadskiy, 2½ pp

"Dok[illegible] Akad Nauk SSSR, Nova Ser" Vol LIX, No 7

Reports distribution of fluorine in soils of the USSR Basic source of fluorine in the soils: disintegrated rocks containing average of 0.03% F, their minerals containing considerable amount of fluorine, such as apatite, tourmaline, biotite, muscovite and other minerals. Gives other secondary sources. Gives table of fluorine containing soils of the USSR.

47T102



Molybdenum in USSR soils. A. P. Vinogradov and K. G. Vinogradova (*C. R. Acad. Sci., U.R.S.S.*, 1948, [illegible]).—The Mo content of tundra soils (Kola Peninsula, Leningrad, and Moscow areas) varies from 1·8 to 12 p.p.m. The values for grey and brown forest soils (Kazan, Tula, Mezhop areas) are 1·8—4, for chernozem (Voronezh, N. Caucasus) 1·8—2·8, and for grey, chestnut, and red soils (C. Asia, Transcaucasia) 2—4 p.p.m. The Mo content tends to rise with increasing depth of sampling. *R. Truscon.*

VINOGRADOV, A. P.

26376 Mnogokovshevyy zkskavator dvoynogo deystviya. (Dobycha gliny). Sbornik rabot po mest. stroit. Materialam (Upr. prom-sti stroit. Materialov i stroit. Detaley pri mosgorispolkome, nauch-issled i zksperim. Stantsiya, vyp. 2-3, 1949, s. 23-26.

SO: LETOPIS' NO. 35, 1949

VINOGRADOV, A. P.

24854. VINOGRADOV, A. P. Biogeokhimicheskiye Provintsii. Trudy Yubileynoy Sessii, Posvyashch. Stoletiyv So Dnya Rozhdeniya Dokychayeva. M.-L., 1949, S. 59-84.

SO: Letopis' No. 33, 1949

CA

Chromium and vanadium in the soils of the Soviet Union. A. P. Vinogradov and G. G. Bergman. *Pochvovedenie* (*Pedology*) 1949, ~~...~~-73. In soils of the tundra zone there is more V than Cr, probably because of the nepheline syenite. There is more V and Cr in the upper than in the lower horizons. There seems to be more V in the tundra soils than in many soils of the other soil groups. The soil podzolized soils on clay loams contain more Fe and correspondingly more Cr than the soils on boulder clay. There is more Cr than V in these soils. There is a more or less uniform content of V in the profile. There is a definite concn. of Cr and sometimes of V in the *B* horizon. In the gray forest soils there is a concn. of V and Cr in the *B* horizon. Chernozem soils contain relatively more Cr and V than the other zonal soils. There is a concn. of Cr and V in the upper horizon, with slightly more Cr. The chestnut-brown and gray semidesert soils have more Cr than V. The red loams, in spite of the high Fe content, contain small amts. of Cr. The V content is higher than in any of the soil groups. In general, the Cr content is higher than that of V. The av. of all soils is: Cr 1.9×10 [illegible] and V 1×10 [illegible]. Tabular data are given on the Cr and V contents of the profiles of the zonal soils in Russia as well as the soils in the U. S., France, England, Germany, and Japan. J. S. Joffe

VINOGRADOV, A.P.

The origin of Urovsk endemic. Trudy Biogeokhim. Lab., Akad. Nauk S.S.S.R. No.9, 5-29 '49. (MLRA 6:5)
(CA 47 no.16:8200 '53)

VINOGRADOV, A. P.

USSR/Science - Soil Science
Chromium, in soils

Oct 49

"Chromium and Vanadium in Soils of the USSR," A. P. Vinogradov, G. G. Bergman, Lab of Geochem Problems imeni V. I. Vernadskiy, Acad Sci USSR, 5 pp

"Pochvoved" No 10

Most soils in USSR lowlands (except tundras and red earth) have an average content of 1.9·1.10-2% chromium and 1.10-2% vanadium. Chromium content in soil horizons is practically the same as that of iron. Vanadium is more or less uniform in distribution. Table gives chromium, vanadium, and iron

151T106

USSR/Science - Soil Science (Contd) Oct 49

content of different soil horizons in various parts of USSR and some foreign countries. Characteristics of chromium and vanadium compounds, especially in humus soils, should be studied. Soluble chromium compounds have been observed, particularly in soils on serpentine rocks.

151T106

VINOGRADOV, A.

24000 VINOGRADOV, A. Shchelochi Li, Na, K, Rb(1Cs) v pochvakh SSSR. (K geokhimii rasseyannykh v pochvakh khim. elementov). Problemy sov. pochvovedeniya, SB. 15, 1949, S. 23-30. -- Bibliogr: S. 30.

SO: Letopis, No. 32, 1949.

VINOGRADOV, Aleksandr Pavlovich, 1895-

Geochemistry of scattered rare chemical elements in the soil. Moskva, Izd-vo Akademii nauk SSSR, 1950. 227 p. (52-15919)

QD172.R2V5

1. Earths, Rare

VINOGRADOV, A. P.

113

Fundamental laws of the distribution of trace elements among plants and environment. A. P. Vinogradov. *Mikroelementy v Zhizni Rastenii i Zhivotnykh, Akad. Nauk S.S.S.R., Trudy Konf. Mikroelement.* 1950, 7–20(1952).—A general review of data on distribution of trace elements between the living and the nonliving world. A brief summary is presented of the naturally occurring endemic conditions in plants caused by abnormalities in the supply of the trace elements; a few references to similar effects on the animals are made. Physiological role of trace elements in the plants. M. Ya. Shkol'nik. *Ibid.* 39–54.—A review with numerous references, covering mainly the period 1935–1949, dealing with the effects of trace elements on plant physiology; the elements discussed include Mn, Cu, Zn, B, Mo. Effectiveness of boron fertilizers and conditions of their use. M. V. Katalymov (D. N. Pryanishnikov Agrochem. Exptl. Sta., Dolgoprud). *Ibid.* 78–85; cf. *C.A.* 45, 1711e.—Effects of traces of B on crops are summarized. Addn. of B to the soil raises the crops of clover and alfalfa, especially in limed soils or those supplied with $CaCO_3$; similar effects are found under field conditions with feed beets, flax, mustard plant, and vegetables in general. ment of the lacteal system parallels B content. Thus, poppy plants which begin to lose their opium content also lose the viability of the lacteal system; when this phenomenon takes place the content of B in the pods and upper leaves declines significantly. Flower falling in Himalayan *Scopolia* can be prevented by treatment of the bushes with solns. contg. B or by introduction of B into the soil. The normal poppy plants contain 39–43.3 mg. B/kg. of dry plant matter depending on the species. Physiological significance of copper for plants and its effect on crops. M. M. Okuntsov (V. V. Kuibyshev State Univ., Tomsk). *Ibid.* 371–80.—Expts. with addn. of $CuSO_4$ (0.000005–0.005*M*) to cultures of oats, wheat, barley, potato, and beans indicate that the various possible methods of introduction of Cu at moderate concns. aid chlorophyll formation, retard age symptoms, raise protein content, and increase the rate of respiration. Physiological role of copper in plants on peat soils. A. S. Okseneuko and L. K. Ostrovskaya. *Ibid.* 400–9.—Cu deficiency lowers the content of polyphenol oxidases, which in turn raises the content of the reduced forms of glutathione and ascorbic acid; at the same time the organism acquires an abnormally low general oxidation-

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A. P. Vinogradov

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reduction potential; this leads to high respiration intensity (60% over control) with exhaustion of sugar supplies. The expts. were made on kok-saghyz plants. **Effect of copper on growth and development of potato.** N. S. Arkhangel'skaya (Ministry of Agr. U.S.S.R., Moscow). *Ibid.* 410-16.—Introduction of Cu via the extra-radicle route is more effective in the production of beneficial effects of this trace element than is its entry through the soil; spraying or wetting of the plant with $CuSO_4$ (0.001*M*) gave up to 18% increase in crop yield. About 12% of added Cu enters the tubers. In peaty soils, wetting of the tubers before planting is the best method of Cu entry. Cu concs. mainly in the outer layers of the potato tuber, in sites of eye formation, and highest enzymic activity. Cu spraying or wetting methods lead to increased chlorophyll content of the plant and increased respiration intensity. **Molybdenum and its biological role.** Eh. G. Vinogradova (V. I. Vernadskii Inst. Geochem. and Anal. Chem., Acad. Sci. U.S.S.R., Moscow). *Ibid.* 515-38; cf. *C.A.* 46, 7712*a*.—Review with numerous references covering the period to 1950. **The role of molybdenum in the life of plants.** A. A. Drobkov (V. I. Vernadskii Inst. Geochem. and Anal. Chem., Acad. Sci. U.S.S.R., Moscow). *Ibid.* 539-45; cf. *C.A.* 48, 7712*a*.—A brief review in which it is pointed out that traces of Mo are necessary for plants, particularly the leguminous plants. Mo aids the formation of nodules and raises the content of N in the plants. Mo aids the growth of clover and protects it during the winter months, along with increased total plant mass and seed yield. The administration of Mo, as NH_4 molybdate, appeared to be satisfactory at about 1 mg./l. level in the applied solns. **The effect of molybdenum on the crop and chemical composition of the bean family plants.** I. A. Chernavina. *Ibid.* 546-60.—Addn. of NH_4 molybdate as seed treatment or as soil fertilizer results in improved total crop, seed yield, and root size of the bean family plants. Seed treatment or plant spraying produces good results most economically. The best results are obtained in the year following the use of such mineral supplement. Mo content rises in leaves,

A. P. Vinogradov

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rootlets, and tubers. Ca content also rises. At the same time the plants display better utilization of N and provide a more intense synthesis of protein matter, with increase of protein to nonprotein N ratio. Leaves of plants supplied with Mo accumulate less sugars than do control plants; thus sol. carbohydrates are less mobile under conditions of Mo deficiency. Mo also improves P utilization with increase of org. P fraction. Experiments on the effect of boron, molybdenum, and other trace elements on seed sprouting. V. P. Kuznetsov. *Ibid.* 601–7.—Seed treatment of cotton seeds with H_3BO_3 soln. (200 mg./l.) for 18 hrs. leads to improved cotton crop by 20% with decrease of pod-falls and hastening of ripening. Solns. of H_2SeO_3 (100 mg./l.) reduces ripening period by 7 days and increases cotton crop by 24%. Treatment with NH_4 molybdate solns. (1000 mg./l.) increases the energy of sprouting; excessive soaking in water leads to a sharp decline in sprouting of the seeds but a soaking in the molybdate soln. for 18 hrs. restores the normal viability of the seeds. Mo stimulates the activity of *Azotobacter*, cocci, and bacteria, particularly in the rhizosphere. Mo aids accumulation of nitrate N in the soil but does not affect P. Mo supplements can increase cotton crops by about 30%. The effect of some chemical elements on the immunological properties of plants. V. P. Nilova and V. F. Rashevskaya. *Ibid.* 601–602.—Seed pretreatment with solns. of trace elements and those needed in larger amts. can be used as a means for direction of chem. processes in the plants resulting from the seeds, including the immunological properties. Thus $ZnCl_2$, NaCl, and KCl lowered catalase activity in wheat grains and in the resulting sprouts; $KMnO_4$ or $CuCO_3$ raised the activity of catalase and peroxidase. As a result the former seeds are more resistant to brown rust than the latter group. Effects of mineral salt treatment of wheat on general biochem. properties of leaves and crop yield are similarly cited. Summer wheat gives best crop yield increases after seed treatment with $KMnO_4$ or $Ca_3(PO_4)_2$; in winter wheat a similar effect was had from NaCl, $ZnCl_2$, $FeCl_3$, H_3BO_3, and was relatively low with $KMnO_4$ and $Ca_3(PO_4)_2$. No specific data are cited on immunological changes. The role of trace elements in improving the resistance of plants to disease. T. D. Strakhov and T. V. Yuroshenko (State Univ., Kharkov). *Ibid.* 603–12.—A supply of trace elements (Cu, Fe, Zn, Ni, Mn) improves the resistance of oats to the attack by *Ustilago avenae*. Fe, Na, and Zn improve the growth activity of the plant. NaCl and $FeSO_4$ in low concns. decreased the size of the *U. avenae* infestations where they did occur. The best results are obtained with Ni and Mn supplied with the normal N, P, and K; Mn is most effective, followed by Ni, Fe, and Zn, in order. Similarly affected is the attack of winter rye by *Urocystis occulta*. G. M. Kosolapoff

CA

S

Change of the chemical composition of the carbonate rocks of the Russian platforms. A. P. Vinogradov, A. B. Ronov, and V. M. Ratinskiĭ. *Izvest. Akad. Nauk U.S.S.R., Ser. Geol.* 1952, 33–50.—The qual. changes of chem. compn. of the carbonate rocks of the Russian platforms are considered. The trends and periodical character of these changes, and the close connection of the evolution of carbonate compns. with general geochem. changes and the history of the tectonic development of the Russian platforms are discussed. Tables of representative chem. analyses are given. Maps are provided to show geographic distribution of the samples. Graphs are given which show (1) Ca and Mg contents *vs.* time, (2) Ca/Mg content *vs.* time, (3) Sr and $CaSO_4$ content *vs.* time, (4) insol. material and Ba content *vs.* time, (5) the Th and insol. material content *vs.* time, and (6) the Ca/Sr content *vs.* time. Gladys B. Macy

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11 D

Preparation of the products of reduction of carbon dioxide, labelled with carbon^{14}, by the chloroplasts outside a cell. A. P. Vinogradov, B. A. Bolchenko, and V. I. Baranov. *Doklady Akad. Nauk S.S.S.R.* 78, 327-9(1951); cf. *C.A.* 46, 7937h.—Chloroplasts from white clover or primula, isolated from the cells, were exposed to CO_2 labelled with C^{14} in the presence of 2% O by manometric technique. Control expts. with boiled chloroplasts gave no C^{14} activity in the exts., but active chloroplasts gave significant activity, and almost all activity was ppted. by Ba as a complex, which contains 0.6% P and is free of N, consisting largely of carbohydrate-like materials, giving uronic acid reaction, and other carboxylic acids. The latter increase in proportion on cloudy days, the former predominate in specimens taken on sunny days. In prolonged expts. some 70% of the retained C^{14} is extractable with EtOH, in the ketose fractions. Thus, the process of reduction proceeds via carboxylic acids which do not reduce Cu, then uronic acids, then ketoses. G. M. Kosolapoff

VINOGRADOV, A.P., ZADOROZHNYY, I.K., ZYKOV, S.I.

Lead - Isotopes

Composition of lead isotopes and the age of the earth. Dokl. AN SSSR 85, No. 5, 1952.

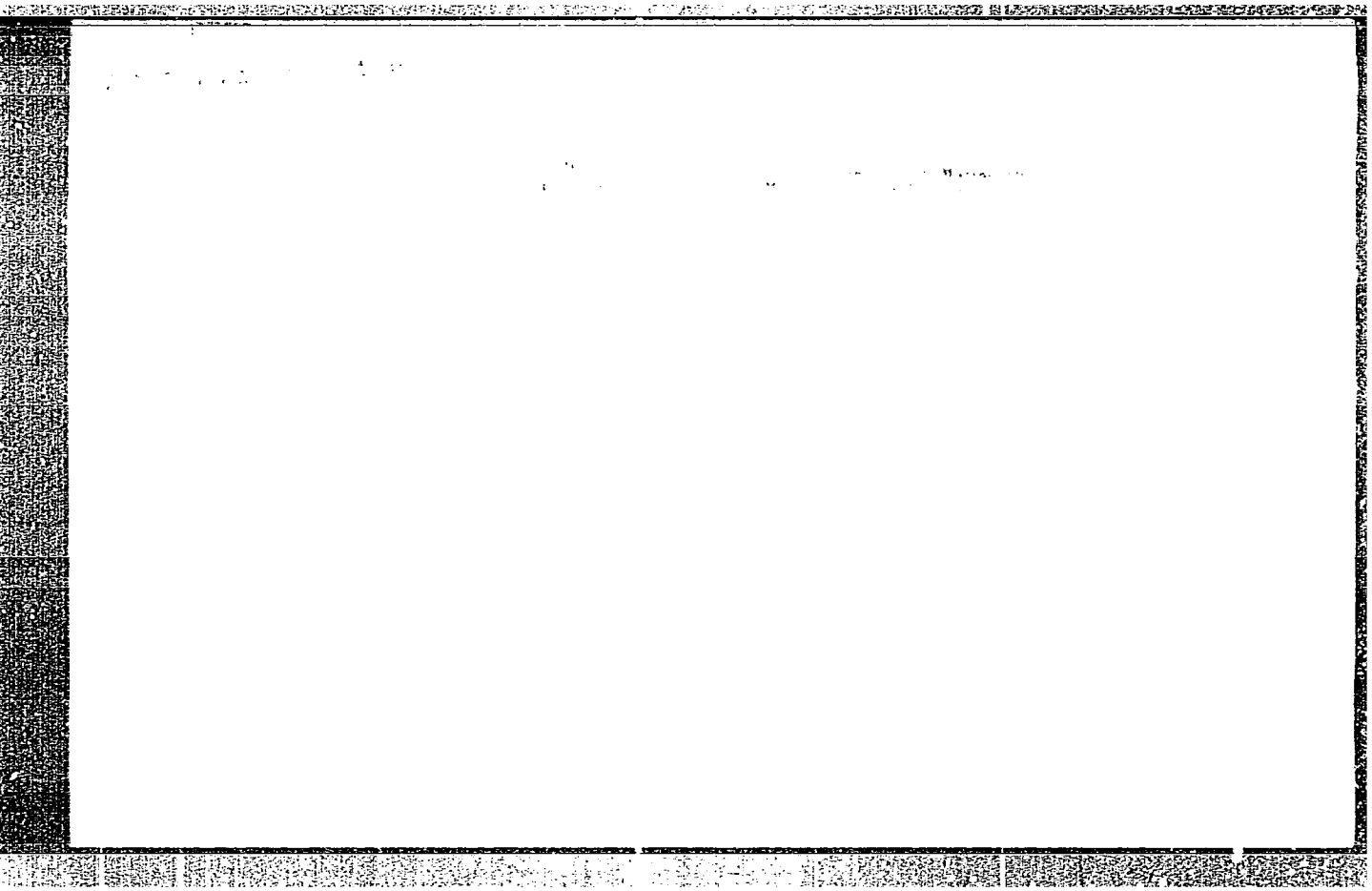
Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

VINOGRADOV, A. P.; DONTSOVA, YE. I.

Oxygen - Isotopes

Isotopic oxygen constituent of minerals of scarn origin. Dokl. AN SSSR 85 no. 6, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1958. Unclassified.



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859910007-1"

Vinogradov, A. P.: Geochemie selt...ner und nur in Spuren vorhandener chemischer Elemente in Boden. Berlin: Akad.-Verlag. 1954. 230 pp. DM 27.

Translation of Title: Geochemistry of Rare and Trace Elements in Soils.

VINOGRADOV, A.P.

USSR/ Geology - Geochemistry

Card 1/1 Pub. 46 - 1/19

Authors : Vinogradov, A. P.

Title : The geochemistry of isotopes

Periodical : Izv. Ak. Nauk SSSR. Ser. geol. 3, 3 - 19, May - Jun 1954

Abstract : Excerpts are presented of the lecture entitles, "The Geochemistry of Isotopes," given by the author on February 1, 1954 during the general meeting of the Academy of Sciences, USSR. It is pointed out that by studying the isotopic composition of elements in litho-, atmo-, and hydrospheres it would be possible to study the following important geological problems: development of the earth as a whole and individual fragment of the earth's crust, origin of the atmosphere, problems of diffusion of oxygen, sulfur, carbon, hydrogen in the crust of the earth and the connection between the hypogeneous and hypergeneous processes occuring in the earth, and so on. Tables; graphs; drawings; illustration.

Institution: .....

Submitted: February 5, 1954

VINOGRADOV, A. P.

USSR.

Search for ore deposits by means of plants and soils. A. P. Vinogradov. *Trudy Biogeokhim. Lab., Akad. Nauk S.S.S.R.* 10, 3-27(1954); cf. *C.A.* 49, 438g.—A detailed review, with numerous references, of the methods used to locate ores by chem. analysis for the desired metals of the plants and soils in the area; plants in the ore location usually show metal enrichment by a factor of 10 or greater over normal levels.

G. M. Kosolapoff

VINOGRADOV, A. P.

USSR/Miscellaneous - Isotopes

Card : 1/1

Authors : Vinogradov, A. P., Academician

Title : Geochemistry of isotopes

Periodical : Vest. AN SSSR, 24, Ed. 5, 26 - 43, May, 1954

Abstract : A general description of various methods for the determination of terrestial and atmospheric ages, made possible by determining the changes in isotopic ratios of the elements. Calls special attention to a method based on the determination of the C^{14} isotope in the atmosphere, and illustrates an installation for detecting the C^{14} in the atmosphere. Charts and tables showing variations with the ages of such isotopic ratios as O^{16}/O^{18}, C^{12}/C^{13} and S^{32}/S^{34}. The possiblity of determing the role which these isotopes played in formation of rocks and minerals is also discussed.

Institution : ...

Submitted : ...

VINOGRADOV, A.P.

[Physicochemical control methods of uranium production] Fiziko-khimicheskie metody kontrolia proizvodstva urana; doklady, predstavlennye SSSR na Mezhdunarodnuiu konferentsiiu po mirnomu ispol'zovaniiu atomnoi energii. Moskva, 1955. 20 p. [Microfilm]
(Uranium) (MLRA 9:3)

VINOGRADOV, A.P., akademik, redaktor.

[Use of tagged atoms in analytical chemistry] Primenenie mechenykh atomov v analiticheskoi khimii. Moskva, Izd-vo Akademii nauk SSSR, 1955. 233 p. (MLRA 8:11)

1. Akademiya nauk SSSR. Institut geokhimii i analiticheskoy khimii.
(Chemistry, Analytical) (Radioactive tracers)

STARIK. I.Ye., redaktor; SHCHERBAKOV, D.I., akademik, redaktor; VINOGRADOV, A.P., akademik, redaktor; POLKANOV, A.A., akademik, redaktor; SHATSKIY, N.S., akademik, redaktor; BARANOV, V.I., professor, redaktor; PEKARSKAYA, T.B., kandidat geologo-mineralogicheskikh nauk, redaktor; CHERDYNTSEV, V.V., redaktor; POLYAKOVA, T.V., tekhnicheskiy redaktor.

[Transactions of the third session of the Committee for Determining the Absolute Age of Geological Formations, March 25-27, 1954] Trudy tret'ei sessii, 25-27 marta 1954. g. Moskva, 1955. 260 p. [Microfilm] (MLRA 9:1)

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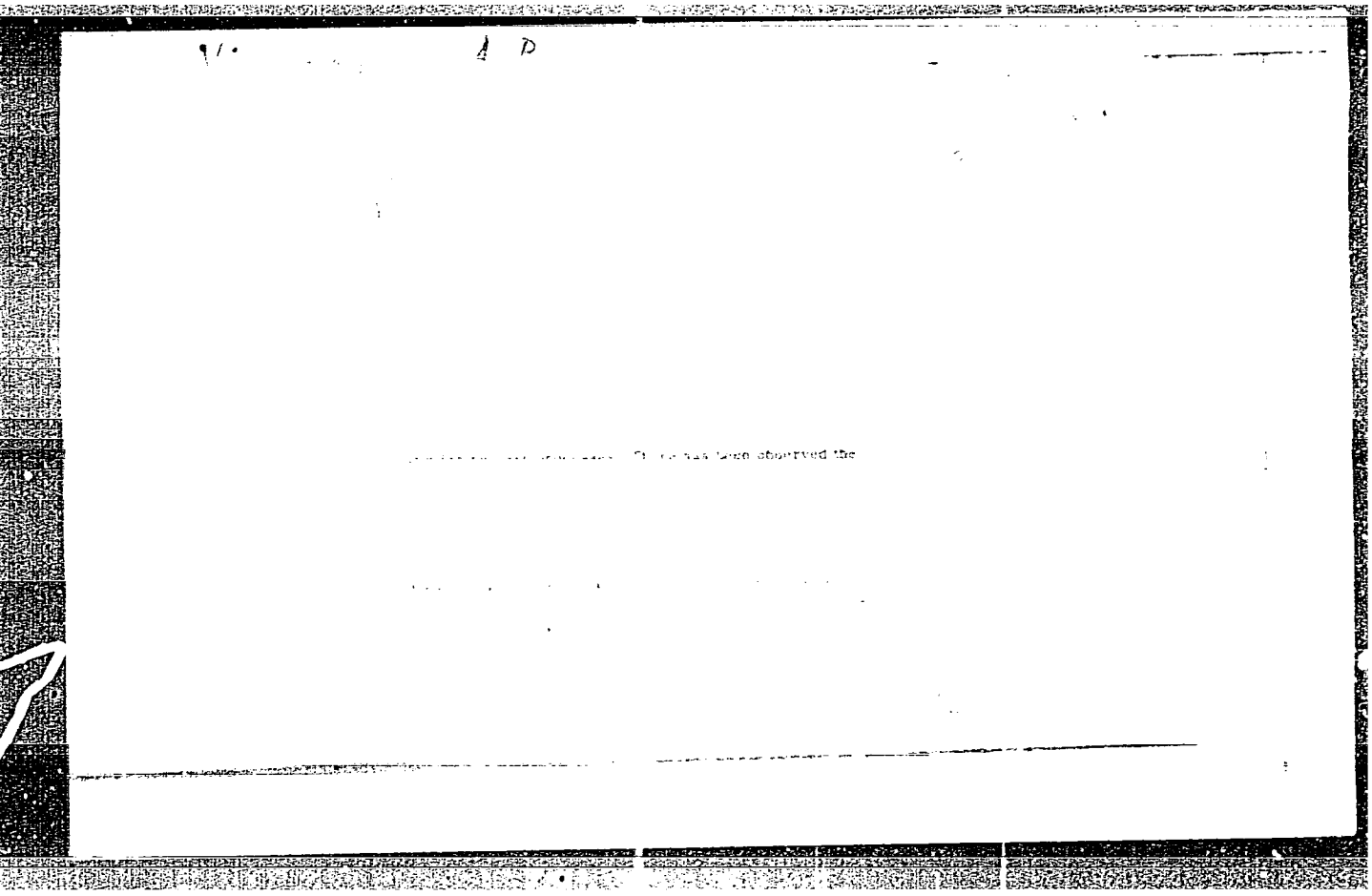
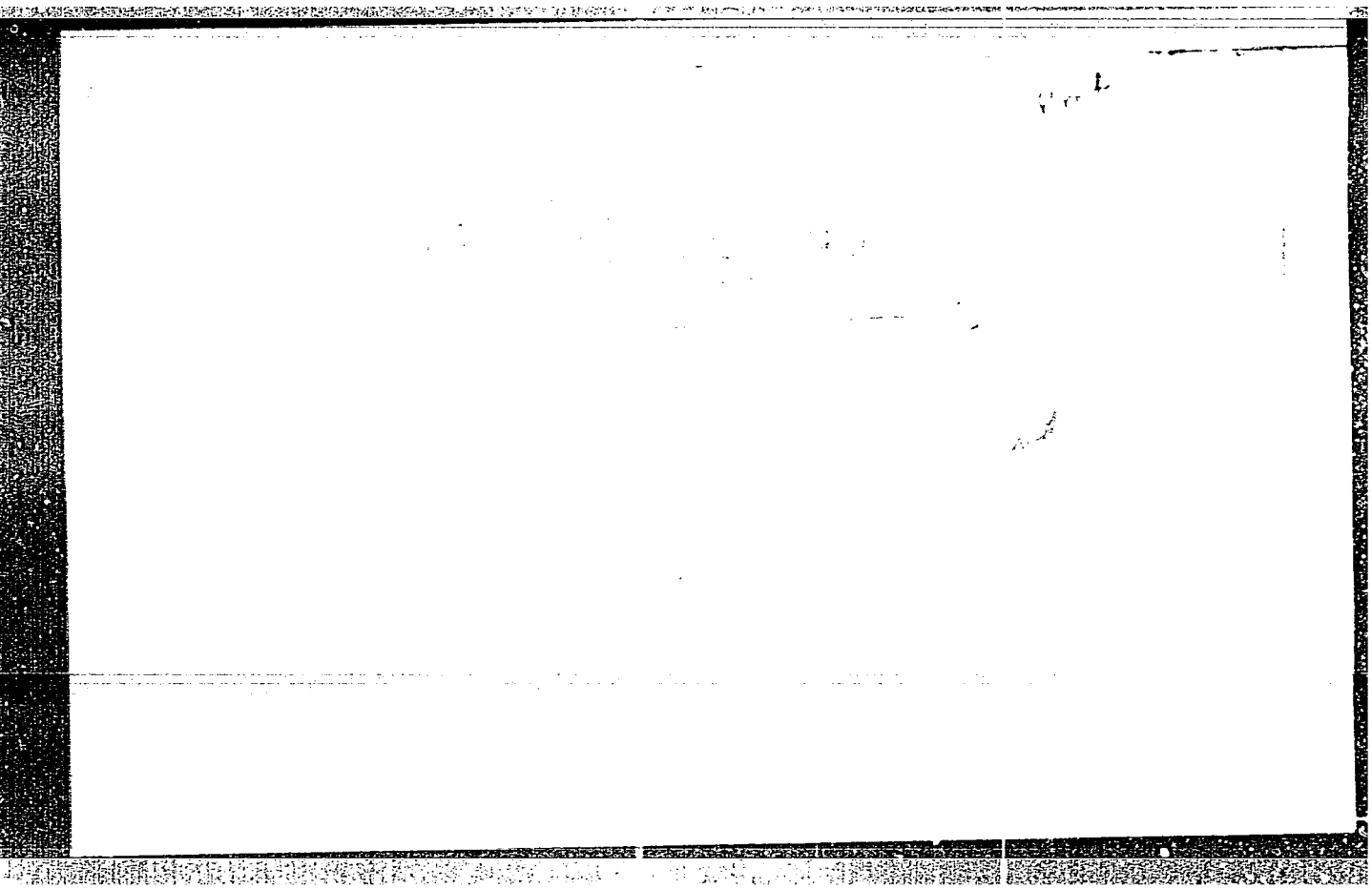
BARANOV, V.I.; VINOGRADOV, A.P., akademik, redaktor; MYASNIKOV, I.A. redaktor; STRUCHKOV, Yu.T., redaktor; MOSKVICHEVA, N.I., tekhnicheskiy redaktor.

[Radiometry] Radiometriia. Moskva, Izd-vo Akademii nauk SSSR, 1955. 327 p. (MLRA 8:12)
(Radiation--Measurement)





APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001859910007-1"

VERNADSKIY, Wladimir Ivanovich, 1863-1945; VINOGRADOV, A.P., akademik, redaktor; SHUBNIKOVA, O.M., doktor geologo-mineral'nykh nauk; redaktor; KUN, H.P., redaktor; ZELENKOVA, Ye.V., tekhnicheskiy redaktor.

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(Geochemistry) (Mineralogy)

FERSMAN, A.Ye., akademik; BELOV, N.V., akademik, redaktor; VINOGRADOV, A.P., akademik, redaktor; SHCHERBAKOV, D.I., akademik, redaktor; KAPUSTINSKIY, A.F., redaktor; SAUKOV, A.A., redaktor; SHCHERBINA, V.V., doktor geologo-mineral'nykh nauk, redaktor; KUN, N.R., redaktor; MOSKVICHEVA, N.I., tekhnicheskiy redaktor.

[Selected works] Izbrannye trudy. Moskva, Izd-vo Akademii nauk SSSR. Vol.3. 1955. 798 p. (MLRA 8:12)

1. Chlen-korrespondent AN SSSR (for Kapustinskiy and Saukov) (Geochemistry)

VINOGRADOV, A. P.

Radiochemical studies of the products of nuclear transformations under bombardment with high-energy particles. A. P. Vinogradov. *Sessiya Akad. Nauk S.S.S.R. po Mir. Ispol'zovaniyu Atomnoi Energii* 1955, *Plenarnoe Zasedanie*, 60–78(English summary, 78–9).—A summary of work done during 1950–2 on nuclear transformations in U, Th, Bi, Ag, Cu, W, and La caused by high-energy protons, neutrons, and He^{++} at 280–680 m.e.v. Radioisotope distribution curves are presented and the studies extended to medium and light nuclei. 13 references. G. M. K.

VINOGRADOV, A.P.

USSR/Optics - Optical Methods of Analysis. Instruments. K-7

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7948

Author : Vinogradov, A.P.
Title : Physico-Chemical Methods of Control of Production of Uranium.

Orig Pub : I ssledovaniya v obl. geologii, khimii. i metallurgii. M., Izd-vo AN SSSR, 1955, 72-89

Abstract : Survey of methods for determining U as applied to its control of manufacture. A brief description is given for the spectral methods of quantitative determination of impurities in U; the determination of small quantities of U in rocks, ores, and semi-finished articles; method of isotopic addition in the spectral determination of U in ores and semi-finished products; X-ray spectral method of determining U and of its impurities; and polarographic determination of U.

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Vinogradov, A.P.

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4039 AEC-tr-2439((Pt. 2) (p. 187-209))
LEAD ISOTOPES AND THEIR GEOLOGICAL SIGNIFICANCE.
A. P. Vinogradov. p. 187-209 of CONFERENCE OF THE
ACADEMY OF SCIENCES OF THE USSR ON THE PEACE-
FUL USES OF ATOMIC ENERGY, JULY 1-5, 1955.
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This paper was originally abstracted from the Russian
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VINOGRADOV, A.P.

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